CONSTRUCTION NEWS

PERSONALS, ENGINEERING SOCIETIES, INDUSTRIAL NOTES, TRADE PUBLICATIONS.

Supplement to ENGINEERING NEWS. Thursday, April 16, 1903.

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PERSONAL.

Mr. Joseph P. Phillips is no longer acting as City Engineer of Scranton, Miss.

Mr. T. A. White has recently resigned the position of City Engineer of Guthrie, Okla.

Mr. Henry E. Huntington has resigned as Vice-President of the Southern Pacific Co.

Mr. Fred A. McClure, City Engineer of Worcester, Mass., has returned from a two-months' trip to Porto Rico.

Mr. George F. Morse has resigned as Assistant Engineer of Construction of the Lehigh Valley R. R. at Buffalo, N. Y.

Mr. G. H. Duggan, of Montreal, has been appointed General Manager of the Dominion Iron & Steel Co., of Sydney, C. B.

Messrs. Ford, Bacon & Davis, Engineers, will remove their New York offices on May 1 to the Blair & Co. Building, 24 Broad St.

Mr. T. W. Geer has been appointed Manager of the Tifton, Thomasville & Gulf R. R., with headquarters at Thomasville, Ga.

Mr. Peter Swenson has been appointed Superintendent of Bridges and Buildings of the Minneapolis, St. Paul & Sault Ste. Marie R. R.

Mayor J. K. Buckingham, of Milford, O., has appointed Messrs. W. E. Motsinger, J. B. Wallace and N. A. Scott Water-Works Trustees for one year.

Mr. C. E. Dearborn has been appointed Chief Engineer in Charge of Construction of the Iowa & St. Louis R. R. with headquarters at Kansas City, Mo.

Mr. W. D. Trump, of Saginaw, has been appointed Assistant General Superintendent of the Pere Marquette R. R., with headquarters at Detroit, Mich.

Mr. C. L. Griesbach has retired as Director of the Geological Survey of India, and is succeeded by Mr. T. H. Holland, F. G. S., Deputy Superintendent.

Mr. L. B. Smyser has been appointed Chief Engineer of the George B. Sennett Co., the Rice Rock Drill Co. and the Rice Gas Engine Co., of Youngstown, O.

Mr. A. S. Barnard, Chief Engineer of the Hull (Eng.) Corporation electrical works, has been appointed electrical adviser to the Government at Ceylon, India.

Mr. A. Kelly, A. M. I. E. E., of the firm of Lester, Taylor, Kelly & Hide, Consulting Electrical Engineers, of Liverpool, Eng., is now visiting this country.

Mr. C. V. Weston, M. Am. Soc. C. E., of Weston Bros., Chicago, has been appointed Chief Engineer of the extension of the South Side Elevated R. R. of Chicago.

Mr. G. N. Wilson has been appointed General Auditor of the Lehigh Valley Coal Co. and the Lehigh Valley R. R. Co., with offices at 228 South Third St., Philadelphia, Pa.

Mr. W. D. Gerber has been appointed Acting Chief Engineer of the Denver, Enid & Gulf R. R., with headquarters at Blackwell, Okla., succeeding Mr. F. G. Jonah, resigned.

Mr. C. H. Wordingham, formerly City Electrical Engineer of Manchester, Eng., has accepted the position in charge of the newly-formed Electrical Department of the British Admiralty.

Mr. John S. Hodgson, Assoc. M. Inst. C. E., of Wellington, Mass., has resigned his position as Assistant Engineer of the Metropolitan Sewerage Works of Boston to accept that of Associate Editor of "St. Bride's Press," Ltd., London, Eng. Mr. Hodgson will leave Boston April 23.

Messrs. Barnes & Farnham, Civil Engineers, of Pittsfield, have opened offices in the Robbins Block, Great Barrington, Mass., in charge of Mr. John M. Race, Assoc. M. Am. Soc. C. E.

Mr. John A. Dodson, heretofore Assistant to the General Manager of the Southern Ry., has been appointed Superintendent of Construction of the entire system, in charge of double tracking and new work.

Mr. W. A. MacCart, Assistant to W. G. Coughlin, Principal Assistant Engineer Pennsylvania R. R., at Williamsport, Pa., has been transferred to the office of the Engineer Maintenance-of-Way at Philadelphia.

The Buffalo Forge Co., Buffalo, N. Y., has removed its Pittsburg, Pa., office from the Fitzsimmons Bldg. to 607 House Bldg. The Pittsburg district sales will be in charge of Mr. H. D. Wilson, M. E., as heretofore.

Messrs. E. P. Roberts & Co., of Cleveland, O., whose intention of establishing a New York office was noted in these columns in our last issue, are Consulting Engineers, practicing in civil, mechanical and electrical engineering.

Mr. Herbert M. Stowers, of North Andover, Mass., has been appointed Superintendent of Streets of Dedham, Mass. Mr. Stowers was for eight years Superintendent of Streets of Franklin, two at Hyde Park and four years at North Andover.

Mr. P. B. Yates, formerly connected with the switchboard engineering department of the General Electric Co., and later with Messrs. Sargent & Lundy, Chicago, has recently joined the engineering staff of Messrs. Stone & Webster, of Boston, Mass.

Mr. William L. Strange, M. Inst. C. E., Under-Secretary to the Government of India in the Building, Roads and Irrigation Branches and Telegraph Departments, has been appointed Director of Irrigation to the Transvaal Government, South Africa.

Mr. John Benton, M. Inst. C. E., has been appointed Chief Engineer and Secretary to the Government of Punjab, India, in the Irrigation Branch, and Mr. William A. Inglis Chief Engineer and Secretary to the Government of Bengal in the Irrigation Branch.

Mr. Willard D. Lockwood, recently with the Isthmian Canal Commission, has sailed for England for Frank C. Roberts & Co., of Philadelphia, to take charge of the erection of an American blast furnace for an English company. His address will be Frodingham, near Doncaster, England. He is accompanied by Mrs. Lockwood.

Mr. S. G. Gano, who for the past five years has served as Assistant Engineer on the Buffalo, Rochester & Pittsburg Ry., with offices at New Castle, Pa., has resigned to accept the appointment of Engineer to make complete topographical and property maps of the city of New Castle. He will begin the surveys at once. It will take probably three years to complete the work.

Mr. William E. Swift, C. E., of West Hartford, Conn., has recently been appointed to a position with the Government Irrigation Bureau. Mr. Swift is a graduate of the Massachusetts Institute of Technology, class of '94, and for some time up to his acceptance of the new appointment had been employed as a civil engineer on the construction of the Rapid Transit subway in New York city.

OBITUARY

Mr. David Russell, General Superintendent of the Brooks Locomotive Works at Dunkirk, N. Y., for 30 years prior to last May, died at Fredonia, N. Y., on April 14.

Mr. S. Morgan Smith, of York, Pa., President of C. S. Morgan Smith Co., manufacturers of water wheels, died in Los Angeles, Cal., on April 12, aged 65 years.

Mr. Henry Van Brunt, Architect, a designer of the Electricity Building at the Chicago World's Fair, died in Milton, Mass., on April 7, aged 70 years. Mr. Van Brunt was a partner of the firm of Ware & Van Brunt, Architects.

Prof. Albert H. Chester, a curator of the Geological Museum and Professor of Chemistry and Mineralogy at Rutgers College, died of pneumonia in New Brunswick, N. J., April 13, at the age of 60 years. Prof. Chester stood in high repute as a mining engineer, and was the author of "Dictionary of the Names of Minerals," and "Catalogue of Minerals, with their Chemical Compositions and Synonyms."

Mr. Augustus Kurth, Civil Engineer, died at his home in Brooklyn, N. Y., on April 11, aged 78 years. Mr. Kurth came to America from Germany, where he served as a lieutenant in the German army, in 1850. Two years later he opened an office as city surveyor and civil engineer at West Mount Vernon, and in 1856 was employed by the New York Harbor Commission to survey the Brooklyn shore from Fort Hamilton to the navy yard. For several years he has served as assessor in the old city of Brooklyn

ENGINEERING SOCIETIES.

COMING MEETINGS.

AMERICAN ELECTROCHEMICAL SOCIETY.
April 16, 17, 18. Annual meeting at New York city. Secy., C. J. Reed, 929 Chestnut St., Philadelphia, Pa.

NATIONAL MUNICIPAL LEAGUE.
April 22, 23, 24. Annual meeting at Detroit, Mich., and Ann Arbor, Mich. Secy., C. R. Woodruff, Philadelphia, Pa.

AIR BRAKE ASSOCIATION.
April 28. Annual convention at Colorado Springs, Colo. Secy., F. M. Nellis, 218 William St., New York city.

NATIONAL ELECTRIC LIGHT ASSOCIATION.
May 26, 27 and 28. Convention at Chicago, Ill. Secy., James B. Cahoon, 136 Liberty St., New York city.

AMERICAN SOCIETY OF CIVIL ENGINEERS.
June 8. Annual convention at Asheville, N. C. Secy., C. W. Hunt, 220 W. 57th St., New York.

AMERICAN FOUNDRYMEN'S ASSOCIATION.
June 9, 10, 11. Annual convention at Milwaukee, Wis. Secy., Richard Moldenke, P. O. Box 432, New York city.

INTERNATIONAL ASSOCIATION OF CAR ACCOUNTANTS AND CAR SERVICE OFFICERS.
June 17, 18. Annual meeting at Quebec, Canada. Secy., L. G. Corcoran, Buffalo, N. Y.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS.
June 22 to 26. Annual meeting at Saratoga, N. Y. Secy., Prof. F. R. Hutton, 12 West 31st St., New York city.

AMERICAN WATER-WORKS ASSOCIATION.
June 23 to 26. Annual meeting at Detroit, Mich. Secy., J. M. Diven, Elmira, N. Y.

AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS.
June 29, July 2. Annual convention at Niagara Falls, N. Y. Secy., R. W. Pope, 95 Liberty St., New York.

SOCIETY FOR THE PROMOTION OF ENGINEERING EDUCATION.
July 1, 2, 3. Annual convention at Niagara Falls, N. Y. Secy., C. A. Waldo, Purdue University, Lafayette, Ind.

AMERICAN PARK AND OUTDOOR ART ASSOCIATION.
July 7, 8, 9. Annual meeting at Buffalo, N. Y. Secy., C. M. Robinson, Rochester, N. Y.

AMERICAN STREET RAILWAY ASSOCIATION.
Sept. 2 to 4. Annual convention at Saratoga Springs, N. Y. Secy., T. C. Penington, 2020 State St., Chicago, Ill.

AMERICAN INSTITUTE OF MINING ENGINEERS.—It is announced with great regret that the meeting arranged for July next in British Columbia, with an excursion to Alaska, has been suddenly rendered impracticable by the withdrawal on the part of Canadian and American railroads of assurances previously given as to cars for the proposed trip. The Pullman Company had been able to promise ample cars for one way, but could not provide the equipment for the return journey. The reason for this step is the unprecedented demand for cars for the regular traffic. Applications and negotiations in every possible quarter have resulted in the conviction that it is impossible to secure even one special train for the journey to British Columbia and back. The abandonment of the trip is doubly to be regretted because many members had given up other plans for the summer in order to take part in this excursion, and because the friends of the society in British Columbia and Alaska had in view elaborate entertainments, and their committees have been actively engaged in arranging the details.—Secy., R. W. Raymond, 99 John St., New York.

INTERNATIONAL GOOD ROADS CONGRESS.—There will be an international congress at St. Louis, Mo., between April 27 and May 2, 1903, to discuss the general subject of road improvement. The congress is of a semi-official nature, being the result of the efforts of the Department of Agriculture, but it is expected that civil engineers from all countries will take part in the discussion.

ENGINEERS' SOCIETY OF WESTERN PENNSYLVANIA.—On the evening of April 18 the society will inspect the Frick Building, a 24-story office building of Pittsburg. The mechanical equipment of this building is unusually complete. The bank located in the building has a 13-in. armor-plate private vault and its public safe deposit vault, also protected by armor plate, is the largest vault in the world so protected. These will be open for inspection. On April 14 a paper was read before the mechanical section of the society by Mr. T. F. Webster, dealing with the subject "Coal Handling Machinery."

CONSTRUCTION NEWS.

CONDENSED LIST OF CONTRACTS PENDING WITH DATE OF OPENING BIDS.

Bids to be opened.	Work.	Place.	See Eng. News.
Apr. 16.	Bridge.	New York, N. Y.	Apr. 9
Apr. 16.	Boilers.	Washington, D. C.	Apr. 9
Apr. 16.	Street lighting.	Bozeman, Mont.	Apr. 9
Apr. 16.	Bridge plans.	Saginaw, Mich.	Apr. 2
	Advertised, Eng. News, Apr. 2 and 9.		
Apr. 16.	Bridges (6).	Indianapolis, Ind.	Apr. 2
Apr. 16.	Paving.	Williamsport, Pa.	Mar. 26
	Advertised, Eng. News, Mar. 26 and Apr. 2.		
Apr. 16.	Water valves.	Cleveland, O.	Mar. 26
	Advertised, Eng. News, Mar. 26 to Apr. 16.		
Apr. 16.	Bridge.	Aradarko, Okla. Ter.	Mar. 26
Apr. 16.	Engine and generator.	New York, N. Y.	Apr. 16
Apr. 17.	Reservoir.	Benwood, W. Va.	Apr. 16
Apr. 17.	Dock work.	Chicago, Ill.	Apr. 16
Apr. 17.	Bridges (4).	Covington, Ind.	Apr. 16
Apr. 17.	Dredge.	St. Augustine, Fla.	Feb. 19
	Advertised, Feb. 19, Mar. 5, 19, and Apr. 2.		

Apr. 17. Building, New York, N. Y. ..... Apr. 2
Apr. 17. Wharf work, Quebec, Que. ..... Apr. 2
Apr. 17. Garbage collection, New York, N. Y. ..... Apr. 9
Apr. 18. Electric transmission line, Toronto, Ont. ..... Apr. 9
Apr. 18. Bridge, Cleveland, O. ..... Apr. 2
Apr. 18. Paving, Evansville, Ind. ..... Mar. 19
Apr. 18. Building, Luzerne, Pa. ..... Apr. 9
Apr. 20. Dredging, New York, N. Y. ..... Mar. 19
Advertised, Eng. News, Mar. 19 to Apr. 16.
Apr. 20. Dredging, Boston, Mass. ..... Mar. 26
Advertised, Eng. News, Mar. 26 to Apr. 23.
Apr. 20. Bridges (3), Zanesville, O. ..... Mar. 26
Apr. 20. Artesian well, Fort Ringgold, Tex. ..... Mar. 26
Apr. 20. Paving, Louisville, Ky. ..... Apr. 2
Apr. 22. Locomotive, Fort Monroe, Va. ..... Apr. 2
Apr. 20. Water-works, Oakland City, Ind. ..... Apr. 2
Apr. 20. Paving, Terre Haute, Ind. ..... Apr. 2
Apr. 20. Drainage ditch, St. Cloud, Minn. ..... Apr. 2
Apr. 20. Roads, Portland, Me. ..... Apr. 9
Apr. 20. Building, Cleveland, O. ..... Apr. 9
Apr. 20. Building, Warrington, Fla. ..... Apr. 9
Apr. 20. Paving, Cincinnati, O. ..... Apr. 9
Apr. 20. Macadamizing, Derry, N. H. ..... Apr. 9
Apr. 20. Grading railway, Cincinnati, O. ..... Apr. 9
Apr. 20. Pumps, etc., Kansas City, Mo. ..... Apr. 9
Advertised, Eng. News, Apr. 9 and 16.
Apr. 20. Buildings, New York, N. Y. ..... Apr. 9
Apr. 20. Gravel roads, Washington, Ind. ..... Apr. 9
Apr. 20. Sewers, Albany, N. Y. ..... Apr. 16
Apr. 20. Sewer, East Chicago, Ind. ..... Apr. 16
Apr. 20. Plans for court house, Greencastle, Ind. ..... Apr. 9
Apr. 20. Electric light plant, Binghamton, N. Y. ..... Apr. 16
Apr. 20. Water pipe, Sandusky, O. ..... Apr. 16
Apr. 21. Paving, Tampa, Fla. ..... Apr. 16
Apr. 21. Locks, Crowley, La. ..... Apr. 16
Advertised, Eng. News, Apr. 16.
Apr. 21. Gas lighting, Des Moines, Ia. ..... Apr. 16
Apr. 21. Dredging, New York, N. Y. ..... Apr. 16
Apr. 21. Paving and sewers, Hammond, Ind. ..... Apr. 16
Apr. 21. Pipe, etc., Pomeroy, N. Y. ..... Apr. 16
Apr. 21. Building, Great Bend, Kan. ..... Apr. 2
Apr. 21. Paving, Shawnee, O. T. ..... Apr. 2
Apr. 21. Paving, Nevada, Mo. ..... Apr. 2
Apr. 21. Paving, Cincinnati, O. ..... Apr. 2
Apr. 21. Bridge, Lincoln, Neb. ..... Apr. 2
Apr. 21. Sewage pumping plant, Calcutta, India ..... Mar. 26
Apr. 21. Vessel, Chicago, Ill. ..... Mar. 12
Apr. 22. Steel lock gates, Nashville, Tenn. ..... Mar. 19
Advertised, Eng. News, Mar. 19 to Apr. 16.
Apr. 22. Dredging, New York, N. Y. ..... Mar. 26
Advertised, Eng. News, Mar. 26 to Apr. 23.
Apr. 22. Sewers, Cincinnati, O. ..... Apr. 9
Apr. 22. Paving, Holland, Mich. ..... Apr. 9
Apr. 22. Pipe laying, etc., Norwalk, Conn. ..... Apr. 9
Advertised, Engineering News, Apr. 9.
Apr. 22. Bridge, Spencer, Ind. ..... Apr. 9
Apr. 22. Street sign boxes, Brooklyn, N. Y. ..... Apr. 16
Apr. 23. Well, Denver, Colo. ..... Apr. 16
Apr. 23. Hydraulic dredge pipe, Portland, Ore. ..... Apr. 16
Apr. 23. Scows, etc. New York, N. Y. ..... Apr. 16
Apr. 23. Bulkhead, Fort Getty, S. C. ..... Apr. 16
Apr. 23. Street signs, St. Mary's, O. ..... Apr. 16
Apr. 23. Sewer, Rockford, Ill. ..... Apr. 9
Advertised, Engineering News, Apr. 9.
Apr. 23. Paving, Lakewood, O. ..... Apr. 9
Apr. 23. Sewers, Cleveland, O. ..... Apr. 9
Apr. 23. Building, Seattle, Wash. ..... Apr. 9
Apr. 23. Buildings, Cheyenne, Wyo. ..... Mar. 26
Advertised, Eng. News, Mar. 26 to Apr. 16.
Apr. 23. Dredging, New London, Conn. ..... Mar. 26
Advertised, Eng. News, Mar. 26 to Apr. 23.
Apr. 24. Brkwtr superstructure, Marquette, Mich. Mar. 26
Advertised, Eng. News, Mar. 26 to Apr. 16.
Apr. 24. Heating plants, San Francisco, Cal. ..... Apr. 9
Apr. 24. Roads, Port Townsend, Wash. ..... Apr. 9
Apr. 24. Sewers, Plain City, O. ..... Apr. 16
Apr. 24. Pier and rope, New York, N. Y. ..... Apr. 16
Apr. 25. Building, Ansonia, Conn. ..... Apr. 16
Apr. 25. Drains, Harvard, Ill. ..... Apr. 16
Advertised, Eng. News, Apr. 16.
Apr. 25. Water-works, Reuterla, Spain. ..... Mar. 19
Apr. 25. Cement and broken stone, Boston, Mass. ..... Mar. 26
Advertised, Eng. News, Mar. 26 to Apr. 23.
Apr. 25. Building, Whipple Barracks, Prescott, Ariz. ..... Apr. 2
Apr. 25. Armored cable, etc., Cleveland, O. ..... Apr. 2
Apr. 25. Bridge abutments, Dayton, O. ..... Apr. 2
Apr. 25. Artesian well, Fort Morgan, Ala. ..... Apr. 9
Apr. 25. Bridge, Dayton, O. ..... Apr. 9
Apr. 26. Paving, Vallejo, Cal. ..... Apr. 2
Apr. 26. Electric plant, Denver, Colo. ..... Apr. 2
Advertised, Eng. News, Apr. 2 to 30.
Apr. 27. Paving, Lafayette, Ind. ..... Apr. 2
Apr. 27. Building, Richmond, Ky. ..... Apr. 2
Advertised, Engineering News, Apr. 2.
Apr. 27. Railway (Foreign), Ireland ..... Apr. 9
Apr. 27. Sewers, Troy, O. ..... Apr. 16
Apr. 27. Wells, etc., Tacoma Wash. ..... Apr. 16
Apr. 27. Bridge, Coshocton, O. ..... Apr. 16
Apr. 28. Driveway, Cape May, N. J. ..... Apr. 16
Apr. 28. Bridge, Tacoma, Wash. ..... Apr. 16
Apr. 28. Sewer system, Cape May, N. J. ..... Mar. 26
Advertised, Eng. News, Mar. 26 to Apr. 23.
Apr. 28. Road, Cape May, N. J. ..... Mar. 26
Advertised, Eng. News, Mar. 26 to Apr. 23.
Apr. 28. Sewers (104,154 lin. ft.), St. Louis, Mo. ..... Apr. 16
Apr. 29. Building, St. Louis, Mo. ..... Apr. 16
Apr. 30. Stone, Portland, Ore. ..... Mar. 26
Advertised, Eng. News, Mar. 26 to Apr. 23.
Apr. 30. Rock removal, Norfolk, Va. ..... Apr. 2
Advertised, Eng. News, Apr. 2 to 16.
Apr. 30. Cement, sand, etc., Washington, D. C. ..... Apr. 2
Advertised, Eng. News, April 2 to 30.
Apr. 30. Building, Washington, D. C. ..... Apr. 9
Apr. 30. Supplies, etc., New York, N. Y. ..... Apr. 9
Advertised, Eng. News, Apr. 9 to 23.
Apr. 30. Buildings, Fort Lincoln, N. Dak. ..... Apr. 9
Apr. 30. Dimension timber, Ottawa, Ont. ..... Apr. 9
Apr. 30. Building, Deseronto, Ont. ..... Apr. 16
Apr. 30. Water-works, Strathoy, Ont. ..... Apr. 16
May 1. Building, Toledo, O. ..... Apr. 16
May 1. Sewer extension, Fort Sam Houston, Tex. ..... Apr. 16
May 1. Sewer system, Connersville, Ind. ..... Apr. 16
Advertised, Eng. News, Apr. 16 and 23.
May 1. Sewer, Aberdeen, S. Dak. ..... Apr. 16

RAILWAYS.

CANADIAN NORTHERN.—The Manitoba legislature has guaranteed $10,000 per mile for 338 miles of the company's road, of which the following lines will be in that province: from Portage la Prairie in a southwesterly direction for 40 miles; from between Greenway and Mariapolis station to range 19, township 1, some 40 miles distant; from Minto in southwesterly direction for 50 miles; from township 36, range 27, westerly for a distance of 20 miles; from Fairfax to Sonris, about 15 miles.

CANADIAN PACIFIC.—The company has secured the land for the East End extension in Montreal, Que.

CHARLESTON, CLENDENNIN & SUTTON.—Contract for building road from Otter, W. Va., 25 miles up Elk River, awarded to McArthur Bros., Chicago. The contractors will sublet the work from their office at Otter, Clay county, W. Va. Side hill work; short hauls. Arthur Lee is Vice-Pres., 1517 H St., Washington, D. C.

CHESAPEAKE & OHIO.—Surveyors are laying out a route from Alberene to a point on the main line near Charlottesville, Va.

CRIPPLE CREEK & PIKE'S PEAK.—Articles of incorporation have been filed in Colorado with $100,000 capital stock by F. A. Wright, C. L. McKesson and J. E. Little.

CYPREMONT & BAYOU TECHE.—Contracts will be let this month for building the road from Cypremont to Bayou Teche, La. I. B. Brown is Pres. and J. P. Kemper, C. E., New Orleans.

DENVER, NORTHWESTERN & PACIFIC.—The State Land Board of Colorado has granted this road a right of way through Gore Canon. It is thought that decision will end the litigation pending to prevent the construction of the road through Gore Range.

FRANKLIN & ABBEVILLE.—A charter has been secured by this company in Louisiana to build a line from St. Mary to a point beyond Franklin, to be determined on later. Capital stock, $50,000. Frank B. Williams, Chas. Godchaux and J. H. Murphy are interested.

GULF, CALCASIEU & NORTHERN.—The directors of this company met at Lake Charles, La., on April 4 and decided that active preparations for building the road should begin at once. A corps will be put in the field within a few days and the work will then be pushed.

GUNFLINT & LAKE SUPERIOR.—Articles of incorporation have been filed in Minnesota with $50,000 capital stock to build a road from the Canadian boundary line in township 65, Cook county, in a southerly direction to Lake Superior; also to construct telephone and telegraph lines. The road will be used for logging, and work will be started as soon as the right of way is cleared, which will be within a few weeks. D. L. Cirpin, Grand Rapids, Wis., is Pres., and Herman Finger, Port Arthur, Ont., is Vice-Pres.

IOWA, ILLINOIS & MISSOURI.—This company was recently incorporated in Iowa with a capital stock of $100,000, to build a line from Dubuque to Davenport, Rock Island and Moline to St. Louis, tapping a dozen trunk lines. It will have three feeders in branches built to Muscatine, Burlington and Keokuk. The length of the road will be about 200 miles. Alphono Mathews, Dubuque; Walter A. Rosenfeld, Moline; Thos. J. Medill, Rock Island, and Geo. H. Boynton, Davenport, are interested.

KENTUCKY.—Peter Arlund and a number of citizens of New Castle have begun plans for a railroad from that place to Eminence, and a large amount of the capital required for the enterprise has already been subscribed. It is expected that final arrangemnts for the construction of the road will soon be completed. S. J. Douthitt, New Castle and J. B. Helburn, Eminence, are directors.

MALADE VALLEY R. R.—W. M. Ashley, Res. Engr., Salt Lake City, Utah, informs us that grading is under way on the line from Corinne, Utah, to Malade City, Idaho, via Garland, and Portage, some 48 miles. The right of way is secured to Garland, 15½ miles. The Utah Construction Co., Ogden, Utah., is doing the work. W. H. Bancroft is Pres.

MICHIGAN CENTRAL.—Contracts for second track from Marshall, Mich., to Augusta let to W. E. Tench & Co., Detroit, who will commence work at once with 200 teams and 100 laborers.

MIDDLESBORO & MINERAL SPRINGS.—Contract for cutting down knoll near Middlesboro and grading yards from Middlesboro to Hanlan, Ky., let to W. J. Oliver & Co. and J. W. Davis & Co., Knoxville, Tenn. Work to commence at once.

MISSOURI, KANSAS & TEXAS.—H. C. Rouse, Pres., and other officials have gone over the cut-off line building from Granger, Tex., through Georgetown and Austin to Maxwell. The construction of a bridge over the Colorado River, south of Austin, will soon be started. S. B. Fisher is Ch. Engr., St. Louis, Mo.

MONTGOMERY COUNTY R. R.—A charter has been issued to this road in Kansas to build a line forming a connecting link between two of the Santa Fe lines. The capital stock is $5,000. Caney will be the northern terminus. H. U. Mudge, E. Wilder and A. A. Hurd are incorporators.

NEBRASKA, KANSAS & GULF.—A company of this name has been organized at Salina, Kan., and a charter applied for. The road will run from Belleville to Ft. Smith, Ark., and connecting with the Kansas City Southern at that point and over that road to Port Arthur, on the Gulf of Mexico. Surveys have already been started. J. Lambert, Joliet, Ill.; Samuel W. Jordan, Kansas City; Wm. Kennefick, of Kennefick & Creek, railway contractors, Kansas City, and John Stewart, Concordia, Kan., are incorporators. The Federal Construction Co. has taken the contract to build the line. John C. Sesser, formerly with the Chicago, Milwaukee & St. Paul, will be chief engineer.

OZARK & CHEROKEE CENTRAL.—The state board of railway incorporators has authorized the company to increase its mileage 400 miles and the capital stock to $9,000,000. The road is in operation from Fayetteville to Okmulgee, Ind. Ter., and will eventually extend through the zinc fields of North Arkansas to Memphis. The total length will be about 144 miles.

PENNSYLVANIA R. R.—Bids were opened by W. H. Brown, Ch. Engr., Philadelphia, Pa., on April 14 for the construction of masonry and grading on the double track road from Glen Lock to Thorndale, Pa., amounting to upwards of 1,650,000 cu. yds. Announcement of the award has not yet been made.

PENNSYLVANIA WESTERN.—We are informed that the final survey has just been completed for this road, 60 miles long. Thos. Rodd, Pittsburg, Pa., is Ch. Engr.

SAN FRANCISCO TERMINAL.—Directors will create bond issue of $6,000,000 for construction purposes.

SIERRA RY.—Board of directors have decided to rebuild portions of this road in the mountains, using heavier rails. About 20 miles will be thus improved, costing $100,000. S. D. Freshman is Asst. Mgr. and Treas., Jamestown, Cal.

SOUTHERN PACIFIC.—Surveyors will soon commence location of cut-off from near Oswego to Milwaukee, Ore. Bridge over river near Elk Rock probable. W. A. Grondahl is Res. Engr., at Portland, Ore.

TENNESSEE CENTRAL.—Appropriation of $200,000 made for improvements at once; 40 new section houses, new water stations, new yards at Cookeville, Tenn., and new rock-crushing plant included in betterments. W. H. McDonald, Ch. Engr., Nashville.

TRINITY & BRAZOS VALLEY.—About 80 miles of this 250-mile road is now under construction. Road will be entirely in Texas. Capital for entire construction and equipment secured. S. A. Robertson, Hillsborough, Tex., contractor; Benj. Thompson, Hillsborough, is Ch. Engr.

TEXAS & NEW ORLEANS.—E. B. Cushing, Ch. Engr., Houston, Tex., writes that Brooks Bros., Sour Lake Station, have contract for line from last-named station to Sour Lake Springs, 8½ miles, and have begun work.

TONOPAH R. R.—Incorporated in New Jersey. Capital stock, $2,500,000; to build road from Rhodes to Tonopah, Nev., 63 miles. Wm. T. N. Braun, S. W. Greene and W. H. Hubbard, all of Camdem, N. J., incorporators.

STREET AND ELECTRIC RAILWAYS

BENNINGTON, VT.—The Bennington & North Adams St. Ry. Co., granted a charter by the last legislature, will build this year from this place to North Adams, Mass., about 20 miles; capital stock, $150,000. Geo. F. Graves, Pres. First Nat. Bank; A. J. Dewey, postmaster, and W. H. Bradford, of H. E. Bradford & Co., are incorporators.

SPRINGFIELD, MASS.—The R. R. Comrs. have authorized the Springfield St. Ry. to issue $1,500,000 in bonds, part of which will be used for additions to power house.

GROTON, CONN.—The senate has passed the resolution granting a charter to the Groton & Stonington St. Ry. Co., to build its road from this town to Stonington. Arrangements for construction will soon be made. A trolley line will be installed. Capitalization, $600,000.

LOCKPORT, N. Y.—The International Traction Co. will spend $100,000 on improvements in this city shortly.

BROOKLYN, N. Y.—The third rail in use on the elevated road of the Brooklyn Heights R. R. will probably be moved from the outer side of the track at stations to the inner side. The estimated cost of this change at 41 stations would be $11,500.

JERSEY CITY, N. J.—Negotiations are under way for the merger of all electric railway systems, electric light and gas plants throughout Hudson, Essex, Union and Passaic counties into one combination. E. F. C. Young, Pres. First Nat. Bank of Jersey City; J. D. Crimmins and others interested in the various systems and plants are promoting the change.

JOHNSTOWN, PA.—Jacob Grosch, Secy. Johnstown & Scalpleve St. Ry. Co., writes that a right of way is secured, and the matter of contracting will be taken up when the city council grants a franchise for the road through Johnstown. The line will be seven miles long and an electric. Capital stock subscribed. Joseph Ruth, Pres.; John Downey, Ch. Engr., both local parties.

PHILIPSBURG, PA.—The Centre & Clearfield St. Ry. Co. has begun work on its line from Phillipsburg, through Hawk Run, Morrisdale, Allport, and Munsons to Winburne, Pa., 12 miles in all. It is expected soon to take up the building from Philipsburg through Gearheartville, Osceola and Houtzdale to Ramey, 15 miles. John G. Platt, Philipsburg, Pres., and E. W. Hess, Clearfield, Engr. The M. F. D. Scanlan Construction Co. are the contractors.

CONNELLSVILLE, PA.—E. T. Norton writes that the Mt. Pleasant, Pleasant Unity & Baggaley Electric St. Ry. has been surveyed, but only a few of the rights of way obtained. The route is not finally determined. Part of the construction capital is provided. The line will be 16½ miles long and will run through the towns named. W. E. Crow, Uniontown, is Pres., and G. W. S. Baton, Pittsburg, is Ch. Engr.

PHILADELPHIA, PA.—The Philadelphia Rapid Transit Co.'s plans for an electric street railway on Broad St., using an underground system, have been approved by the board of surveyors. The line will be about 13 miles long, running from end to end of Broad St. Work will soon begin.

MONTGOMERY, ALA.—The Montgomery St. Ry. Co. has asked for additional franchises for extending its lines in West End and South Montgomery. Raphael Semmes is Gen. Mgr.

SHEFFIELD, TENN.—The Sheffield Ry. Co. has secured the use of the Southern Ry. Co.'s bridge over the Tennessee River for its proposed electric road from Sheffield to Florence and Tuscumbia, Ala., about nine miles long. Construction to begin at once. A power house will be erected here on the south bank of the Tennessee.

LOUISVILLE, KY.—Work will be started next month on the new line of the Louisville Suburban Ry., from this city to Mt. Washington, which will later be extended to Shepherdsville and Eminence.

CLEVELAND, O.—Mayor Johnson has begun work on plans for 3-cent street car lines in this city. As soon as the council is reorganized ordinances will be introduced and bids called for and rights of way obtained.

INDIANAPOLIS, IND.—C. L. Henry, Pres. Indianapolis & Cincinnati Interurban Ry., states that the survey is completed and that the grading, bridge building and power house contracts will soon be let.——Horace C. Stillwell, Anderson, states that the construction company which will build the electric road projected by the Union Traction Co. will soon be organized. It will probably be known as the "Geo. F. McCullough Construction Co.," and be capitalized at $1,000,000.

MADISON, IND.—Richard Johnson, at the head of the Madison-Greensburg line, announces that the survey is being made and that the grading and bridge building contracts will be let as soon as profiles are ready.

ADRIAN, MICH.—R. W. Kirk, Adrian, writes that the contractors are figuring on the construction of the Toledo & Michigan Electric Ry., which will run from Toledo, O., to Elkhart, Mich., some 150 miles. About 56 miles of the right of way is secured, and the construction capital is ready. P. P. Duket is Pres., Spitzer Bldg., Toledo.

BAY CITY, MICH.—Busch Bros., Engrs., 523 Mooney Bldg., Buffalo, N. Y., informs us that the right of way is now being obtained for the electric line from Bay City to West Bay City, Saginaw, Flint, Fenton and Pontiac, a distance of 75 miles.

EAST ST. LOUIS, ILL.—Hutchinson & Jacob, Engrs., Arcade Bldg., have been retained as engineers in the construction of an inclined railway on a slope of 46°, surmounting a bluff about 450 ft. high.

SPRINGFIELD, ILL.—The Lincoln Electric Ry. Co. is incorporated to operate an electric railway; capital stock, $6,000; Lincoln. D. H. Harts, E. C. King and A. D. Cadwallader are incorporators.

FOND DU LAC, WIS.—F. H. Sweet writes that the promoters of the proposed electric railway from Fond du Lac to Stockbridge, Chilton and South Kaukauna have practically secured the rights of way and are now interesting capital to undertake the construction. From this city the line will parallel the shore of Lake Winnebago to Highcliff, about three-fourths of the distance to South Kaukauna. From Brothertown a branch will run to Chilton.

Information concerning contracts to be let or of supplies to be furnished, and corrections of errors and omissions in published items, are invited.

GREEN BAY, WIS.—The survey of the Fox River Electric Ry. & Power Co.'s line into De Pere has been started. Supt. Goodrich and Engr. Brauns have the work in charge.

JANESVILLE, WIS.—Franchise granted by council to the Janesville Traction Co.

MADISON, WIS.—Milwaukee & Southern Ry. Co. incorporated to build a road from Milwaukee to East St. Louis, to be operated electrically; capital stock, $50,000. Earl Parcells, R. B. Tabor, Chicago, and H. A. Porter, Mukwonago, are incorporators.

PLATTEVILLE, WIS.—An electric railway is proposed from Dubuque, Ia., to Platteville and will be built this summer. It will require nearly $1,000,000 to build the road. The Iowa, Illinois & Wisconsin Interurban Ry., capitalized at $750,000, will build the road, and work will start in about 30 days, it is said. Patrick Flynn, Bloomington, is the promoter; Peter Kiene, Dubuque, is Pres.

POCAHONTAS, IA.—A project is afoot to build an electric line from Fonda through this town to Rolfe.

NORFOLK, NEB.—Local papers state that the people of Pierce contemplate building an electric line between that place and this town. The cost will be about $6,000.

HARRISON, MO.—H. A. Oerting, Ch. Engr., informs us that surveys are being made for the Ozark & Sulphur Mt. Traction Co.'s line, and the construction will begin this summer; right of way guaranteed. The line will run from Harrison to Sulphur Springs, Jasper; also from Harrison to Dodd City, a total of 55 miles. Electricity will be used as motive power. Construction will be started this summer. W. G. Gardiner, 1455 Erie St., Toledo, O., is Pres.

BAKER CITY, ORE.—The Baker City Rapid Transit Co. will commence work immediately. Franchise granted, and road will be extended to Virtue and the White Swan mines.

EUREKA, CAL.—Geo. Henderson, who secured the electric road franchises on March 27, stated that work on five miles of the road will commence at once; the surveys will take 10 days.

FRESNO, CAL.—Surveyors are working out the mountain route of the Inter Mt. Electric R. R. S. N. Griffith is interested.

LEMOORE, CAL.—Louis M. Cole, representing a company, applies for a franchise for an electric road through here.

OAKLAND, CAL.—Supervisors grant franchise to J. H. Macdonald and associates for electric road in Alameda county, starting at this city.

STOCKTON, CAL.—Application for franchise made by H. H. Griffiths to operate suburban street railway line.

LOS ANGELES, CAL.—Bids are asked until May 4 for franchise for double-track electric street railway. H. J. Lelande, Cy. Clk.——The petition of Alex. Culver for electric street car franchise in southern part of city granted by council.——Senator W. A. Clark, of Butte, Mont., is said to be behind W. M. Garland, who is applying for a street railway franchise with a 3-ct. fare.——E. D. Goode and J. F. McIntyre, Glendale, and A. O. Parker, Eagle Rock, comprise the committee which is securing the right of way for the electric line from Los Angeles to Glendale, Eagle Rock and Tropico. L. C. Brand is said to be backing the plan, and proposes building the road within six months.

SONORA, CAL.—The bid of Herschel Lamotte for electric railway franchise over certain streets in this city has been accepted by the supervisors.

SAN BERNARDINO, CAL.—San Bernardino & Arrowhead R. R. is purchased by San Bernardino Valley Traction Co., and will be renamed San Bernardino & Highland Electric Ry., with Henry Fisher, Pres. Work will begin at once changing it to an electric, and new road will be laid and new bridges and culverts put in.

SAN FRANCISCO, CAL.—Chas. W. Clark, Francis J. Carolan and Henry P. Bowie are behind the scheme to construct an electric line from San Mateo to Burlingame and Halfmoon Bay. The supervisors have been asked for a franchise and bids will be received on June 1 for the same.

SAN JOSE, CAL.—Geo. W. Elder, San Francisco, has secured the contract for constructing the San Jose, Saratoga & Los Gatos Electric Ry. The road will be 22 miles long. Work will commence within 30 days and be completed within four months. The power will be obtained from the Standard Electric Co.

YREKA, CAL.—The directors of the Yreka R. R. will consider the matter of using electricity in place of steam as motive power. An extension into Scott Valley will also be considered. H. L. Walther is Supt. and Mgr.

LEWISTON, IDAHO.—E. H. Libby has asked for an amended charter for an electric street railway. He will commence work within 12 months if granted.

LIGHT, HEAT AND POWER PLANTS

(For foreign heat, light and power plants see under "Foreign Contracts and Export News.")

IPSWICH, MASS.—Town has voted to establish electric light plant and an appropriation of $25,000 for that purpose will be voted on April 18.

MANSFIELD, MASS.—A special town meeting has been called for considering electric lighting question.

WESTFIELD, MASS.—A committee, of which C. H. Beals is a member, has been appointed to look into matter of municipal power plant.

BRANFORD, CONN.—State senate has passed resolution permitting the Branford Lighting & Water Co. to increase its capital stock from $100,000 to $600,000. The company may also issue bonds. These will be used to pay for construction of additions to the plant.

HARTFORD, CONN.—The New Milford Power Co. has a bill before the legislature for a charter to construct a dam on the Housatonic River for generating electricity. It is proposed to develop 6,000 HP. at first, and later to increase this output to 20,000 HP. Machinery, etc., is stated to have already been secured. If the plan proves successful a similar plant may be built on the Naugatuck River.

BINGHAMTON, N. Y.—Reports state that bids are asked until April 20 for installing electric light plant for the county buildings. A. W. T. Back, Clk.

BUFFALO, N. Y.—The Buffalo Gas Co. has offered to furnish the city with lights for a five-year period at $14.85 per year for lamps burning 4 ft. of gas per hour and $20.76 per lamp per year for lamps burning 6 ft. of gas per hour.

GENEVA, N. Y.—Work, it is stated, will be begun at once on the plant of the Empire Coke Co. in this city. The plant will make 150 tons of coke per day and 250,000,000 cu. ft. of gas per year, which will be supplied to Geneva, Waterloo, Seneca Falls and Aurora. A pipe line will also be run across Lake Cayuga. Edward H. Palmer is Pres.

NEW YORK, N. Y.—The directors of the National Consolidated Co. have been authorized to purchase the Light & Power Co., of Middleton, N. Y., for a price not to exceed $60,001.

NEW YORK, N. Y.—Bids are asked by the Commissioner of Bridges, 13 Park Row, until 12 o'clock, April 16, for a 100-HP. steam engine electric light plant at Brooklyn bridge power house; also for one 50-KW. d.-c. generator. Gustav Lindenthal, Comr.

PATCHOGUE, N. Y.—A syndicate headed by James F. Heyward, 11 Broadway, New York, N. Y., is stated to have taken the first step toward forming an electric lighting circuit by the purchase of the plant of the Patchogue Electric Light Co. The price paid was about $50,000.

BEVERLY, N. J.—Plans are soon to be started by the Princeton Electric Light Co. for a new power plant at this place.

EASTON, PA.—The Northampton Gas Co. will soon start plans for large additions to their plant.

NEWTON, PA.—The construction of a gas plant by local capitalists is said to be under consideration.

PHILADELPHIA, PA.—The Philadelphia & Reading Railway Co. contemplate the erection of a new electric light plant for lighting the Rutherford yards of the company.

PITTSBURG, PA.—The contract for laying gas and water mains for the new town of Ambridge has been let by the Real Estate Trust Co., the general agent, to Ott Bros., Contractors. Including the purchase of pipe the improvement will involve an outlay of $34,400.

SEAFORD, DEL.—T. Chalkley Hatton, Cons. Engr., Wilmington, Del., is making plans for a municipal electric light plant with complete equipment for this city.

WILMINGTON, DEL.—Reports state that W. D. Brinckle, Arch., Equitable Bldg., has asked for bids for a new power house and plant for the Vulcanized Fibre Co.; new equipment will be added.

BRISTOL, VA.—It is stated that two companies are contending for the right of developing the water power in the Horse Shoe Bend of the Holston River. One of these —the Holston Water & Electric Power Co.—has been granted by the court, privilege of right of way. The other company has been organized by A. T. Smalling, who owns the land about the falls.

FULTON, VA.—The Passenger & Power Co. is to be asked by the light committee to install new lights in this city. Alderman Louis Washer is a member of the committee.

WESTON, W. VA.—Reports state that the Peoples Gas Co. will construct a 20-in. pipe line from Brownsville, Pa., to this place.

BARTOW, FLA.—The city is stated to have purchased the plant of the Bartow Electric Light Co.

JACKSONVILLE, FLA.—C. E. Garner, Albany Power & Mfg. Co., writes us that nothing will be done about the development of power at Albany, Ga., until all privileges are obtained.

BIRMINGHAM, ALA.—A franchise for gas, power and heating plant has been granted to T. H. Aldrich, and T. H. Aldrich, Jr., as trustees of the Birmingham District Coal, Light & Power Co. It is expected that work will be started at once on a plant, the cost of which will be $300,000.

YAZOO CITY, MISS.—The city is stated to have purchased the electric light, sewerage and water-works of the Yazoo Improvement Co. for about $30,000. The light and water system will be extended over all the city. L. C. Montgomery is Chn. W.-W. Com.

BRISTOL, TENN.—It is stated that the Virginia Iron, Coal & Coke Co. is at once to put in a private electric light plant at the company's furnace in this city.

COLUMBIA, TENN.—A franchise for building and equipping an electric lighting plant has been granted to John H. Carpenter.

BOWLING GREEN, KY.—Jackson & Omberg, Cons. Engrs., Dyersburg, Tenn., have made plans for an incandescent lighting plant for this city.

HARODSBURG, KY.—J. Hal Grimes, Mayor, writes us under date of April 11 that bids were being received for a municipal electric plant for street and commercial lighting. The plant is to be operated by steam and is to have a capacity of 35 arcs of 1,200 c. p. each and 60 incandescents of 32 c. p. each. The estimated cost of the plant is $18,000, and J. H. Cochran, Room 3, Board of Trade Bldg., Louisville, Ky., is Des. Engr.

GUTHRIE, KY.—This town is reported to have offered a bonus of $1,000 and a site as an inducement for erecting an electric light plant. Geo. Annadon is Chn. Town Bd.

CLEVELAND, O.—The Federal Gas & Fuel Co., which supplies natural gas at Columbus and Logan, has been sold to the Ohio Fuel & Supply Co., at the head of which is Geo. W. Crawford.

CLEVELAND, O.—The contract for the power house to be erected near Painesville for the Cleveland, Painesville & Ashtabula Electric Ry., has been awarded to Speaker & Co., Toledo, O.

HAMILTON, O.—Mayor C. S. Bosch writes us that nothing has been done as yet toward an addition to the municipal light and water plant.

TOLEDO, O.—Ordinances have been passed providing for lighting by electricity of some 30 streets and alleys. Bids for the work are to be called soon.

GREEN CASTLE, IND.—The De Pauw University trustees have decided to erect an electric lighting plant on the college grounds.

MISHAWAKA, IND.—Reports state that the city will sell its municipal water and electric systems to the Public Utilities Co., a local corporation, which will assume debts of $31,500.

RUSHVILLE, IND.—It is stated that plans are being made by Sargent & Lundy, Cons. Engrs., 46 Van Buren St., Chicago, Ill., for a power plant and barns to be built here for the Cincinnati Traction Co., at a cost of $200,000.

EVANSTON, ILL.—The Northwestern Gas Light & Coke Co. has asked permission to lay certain mains and services.

PLATTSMOUTH, IA.—A private company has been granted a 20-year franchise for furnishing the city with light.

DES MOINES, IA.—Reports state that bids are asked until April 21 for lighting the public parks for 5½ months with naphtha incandescent mantle lamps of 60 c. p. each.

SHELBY, IA.—Municipal plant voted for.

CALEDONIA, MINN.—A new electric lighting plant is to be erected at a cost of $8,000. Walter George is Pres. Council.

ST. PAUL, MINN.—Several requests for electric lighting franchises have been before the council, chief of these being that of the Imperial Manufacturing Co.

STILLWATER, MINN.—It is stated that the property of the Stillwater Gas & Electric Light Co. and the Cripple River Power Co. will pass into the hands of the Western Gas & Investment Co. If the deal goes through about $50,000 will be spent in improving the local plants.

ALBION, NEB.—The Albion Gas Co. has succeeded J. D. Brewer as owner of the local gas plant. It is proposed to increase and otherwise improve the plant. H. L. Brooks is Mgr.

BANCROFT, NEB.—Solomon Keil is stated to be interested in a plan for an electric light plant.

RAPID CITY, S. DAK.—Franchise for electric light plant has been granted to Frank W. Lockhart and W. H. Chambers.

PENDER, NEB.—Electric lighting talked of.

ST. LOUIS, MO.—The St. Louis Transit Co. is stated to have taken the preliminary steps looking to the erection of a power house in East St. Louis, close to the coal fields of Southern Illinois. The power house is to have a capacity of not less than 40,000 HP. and work on it is to be commenced this summer. A. B. Dupont is Gen. Mgr.

SPOKANE, WASH.—A 42-year franchise has been granted to the Spokane Light & Power Co. for furnishing electric light and power.

BAKER CITY, ORE.—J. K. Romig, of the Sanger Gold Mine Co., is reported as saying that his company would install an electric plant to be run by water power this year.

BAKER CITY, ORE.—Reports state that J. W. Springer will make arrangements for enlarging the power plant and light capacity of the Baker Gas & Electric Co.

EUREKA, CAL.—Reports state that the Van Duzen Electric Power Co. has completed surveys for the power system to Eureka and every point in the Eel River Valley. Arrangements will be made for a plant of 2,000 HP., which will be established at once on the Van Duzen. Five other plants will follow aggregating a total of 10,000 HP.

SAN DIEGO, CAL.—It is stated that bids are to be opened June 1 for plans and specifications for an electric light plant for the city. Geo. D. Goldman is Cy. Clk.

SAN FRANCISCO, CAL.—It is stated that the Northern California Power Co. is planning to install a gas plant at Redding.

SAN LUIS OBISPO, CAL.—The Pacific Coast Gas, Light & Power Co. may erect a power plant at Santa Maria.

STOCKTON, CAL.—Prof. C. L. Cory, of the University of California, has been making plans and estimates of cost for a municipal lighting plant, for the erection of which it is proposed to vote on a $160,000 bond issue.

PROVO CITY, UTAH.—The contract for driving a 1,100-ft. tunnel near the mouth of Provo Canyon, where new power plant of the Telluride Power Co. is to be located, has been let to the Utah Construction Co. for about $20,000.

MONTREAL, QUE.—It is stated that the Montreal Heat, Light & Power Co. is to issue $4,000,000 30-year bonds to acquire the Lachine Rapids Hydraulic & Land Co.

WINDSOR, ONT.—Reports state that the manufacturing plant of the Windsor Gas Co. is to be doubled.

REGINA, ASSA. WEST.—J. Galt, formerly city engineer of Ottawa, has been engaged as consulting engineer for proposed electric lighting, drainage and water-works system to be put in at this place.

BONDS.—Blakely, Ga., votes May 20 on issue $1,200 additional bonds for water and light extension.——Sandersville, Ga., will vote April 23 on issue of $37,000 electric light and water-works bonds——Omaha, Neb., votes May 5 on an issue of $500,000 electric light plant bonds. ——Stockton, Cal., will vote on $160,000 bond issue for erecting municipal lighting plant. See item elsewhere in this column.——Shelby, Ia., has voted bonds to put in a municipal lighting plant.

BRIDGES

AUGUSTA, ME.—Bills have been passed by the legislature carrying appropriations for bridge work in the following towns: Milbridge bridge, $1,000; Frenchville, $500; New Sharon, $1,500; Merriville, $1,000; Washburn, $3,000; Bancroft, $1,200; St Croix bridge, $2,000; Mattawamkeag bridge, $2,000; Wiscosset bridge, $1,000.

BANGOR, ME.—P. H. Coombs, Cy. Engr., has been working on plans for a bridge at Water St. over the Kenduskeag. The cost is estimated at about $35,000.

WESTFIELD, MASS.—The committee on the Hedges Ave. extension have reported that in order to extend the avenue to Archley St. it will be necessary to construct a 50-ft. span, three-track bridge, at a cost of $11,088.

WESTPORT, MASS.—W. F. Williams, Cy. Engr., New Bedford, Mass., has been engaged to make an examination of the Westport Point Bridge, which is to be repaired.

NEW HAVEN, CONN.—The U. S. War Department has notified the city that a bridge must be built over the West River within one year from date. The cost will be about $200,000. John F. Studley is Mayor.

BUFFALO, N. Y.—The Councilmen have inserted an item in the estimates appropriating $50,000 for beginning work on a new bridge over the Buffalo River at Ohio St.

BUFFALO, N. Y.—The grade crossing commissioners have recommended that the contract for constructing a bridge over the Erie R. R. at Perry St., be let to the American Bridge Co. for superstructure at $86,667, and to Miller & Franklin at $65,565 for the substructure. It was also recommended that the contract for the Lake Shore bridge substructure be let to McKeown & Johnson for $106,894 and that the superstructure be let to the American Bridge Co. for $69,049.

NEW YORK, N. Y.—The following bids have been received by the bridge department for building the pedestals for the Manhattan bridge towers: John C. Rogers, $150,000; Ryan & Barker, $182,000; Thomas Dwyer, $168,618; Edward J. Farrell, $190,450. All bids were rejected on the ground of being excessive, and new bids are called until April 30. Gustav Lindenthal, Comr.

NIAGARA FALLS, N. Y.—It is stated that surveys which are being made in the interests of the Pere Marquette R. R. seem to show that this company intends to build a bridge over the Gorge near the Niagara Falls Brewing Co.'s plant.

SYRACUSE, N. Y.—Plans, it is said, will be ready soon for building a bridge, to cost $6,000, over Harbor Brook at West Fayette St. F. J. Schnauber is Cy. Engr.

PITTSBURG, PA.—It is stated that the bridge of the Ohio River Connecting R. R. Co., S. B. Leggett, Secy., Union Depot, over the Ohio River, will be reconstructed, in order to accommodate two tracks.

PLAINS, PA.—Bids are asked until April 20 for removal of iron bridge over Gardners Creek, at Hudson, to the abutments built on Mountain Road. John E. Kinney, Clk.

Information concerning contracts to be let or of supplies to be furnished, and corrections of errors and omissions in published items, are invited.

WASHINGTON, D. C.—Lt.-Col. Chas. J. Allen, U. S. Engrs., has recommended that all the bids received March 27 for constructing highway bridge over the Potomac River be rejected. The amount of the appropriation is $966,000 and all the bids submitted are in excess of this sum, except those of the Scherzer Bridge Co., whose bridges are at variance with the specifications. It is possible that the plans may be modified and new bids called.

WASHINGTON, D. C.—The contract for a steel trestle over the tracks of B. & O. R. R., near Avalon, has been let to Lauer & Harper Co. for $1,233.

SMITHFIELD, N. C.—Johnson county commissioners are said to contemplate the construction of an iron bridge over Neuse River, between Wilson Mills and Selma. W. A. Edgerton is Register of Deeds.

PORT GIBSON, MISS.—The contract for a bridge over Carlisle Stream has been let to the Virginia Bridge Co., Richmond, Va., for $12,000.

NASHVILLE, TENN.—It is stated that the Louisville & Nashville R. R. is to construct a bridge over the Red River, near Adams Station The new bridge is to be about 18 ft. higher than the old one.

WAVERLY, TENN.—The contract for a new bridge over Duck River at Foresee's Bluff has been let to the Nashville Bridge & Construction Co. for $130,000.

ALLIANCE, O.—The Stark county commissioners are said to be making arrangements for constructing a county line bridge over Mahoning River.

BARBERTON, O.—The contract for a 40-ft. long and 16-ft. wide steel bridge at this place has been let to the Brackett Bridge Co., Cincinnati, O.

CHILLICOTHE, O.—The Scioto Valley Traction Co. will build a viaduct over the C. & M. V. R. R. if a grade crossing cannot be obtained.

COSHOCTON, O.—Bids are asked until April 27 for erecting superstructure of Hadden bridge in Tiverton. The bridge is to be 222 ft. long, with a single-track roadway 16 ft. wide. C. A. Lamberson, County Auditor.

COVINGTON, IND.—Reports state that bids are asked until April 17 for constructing four iron bridges. Geo. A. Law, Chn. County Comrs.

EVANSVILLE, IND.—White River township has voted for a bridge over White River at Hazelton, the cost of which will be between $40,000 and $50,000.

MUNCIE, IND.—The contract for constructing two bridges, one at Albany and the other at Salon Springs, has been let to the Indiana Bridge Co., Muncie, Ind., for $12,000.

SHEFFIELD, IND.—The contract for a bridge over Wild Cat Creek, at McCauley's Ford, has been let to the Lafayette Engineering Co. for $4,400.

SOUTH BEND, IND.—The local press favors the construction of a bridge at Colfax Ave., also a bridge over the St. Joseph River, between Mishawaka and South Bend.

WINAMAC, IND.—The county commissioners have appropriated $3,250 for the construction of bridges ranging from a 25-ft. bridge in Rich Grove to a 42-ft. bridge in Tippecanoe.

PLAINWELL, MICH.—The contract for constructing a bridge over Kalamazoo River at North Main St. has been let to the O. A. Slater Construction Co., Pontiac, Mich., for $19,900. The bridge is to be of concrete and steel, 446 ft. long, with an 18-ft. roadway and 5-ft. cement sidewalk.

DECATUR, ILL.—The highway commissioners have voted to build a new bridge over the Sangamon at Coulter's Mill, to cost $6,000.

FREEPORT, ILL.—Citizens are petitioning for construction of bridge over Pecatonica River, near Brown's Mill.

MACKINAW, ILL.—Matter of new bridge over Mackinaw River at Stout's Ford has been voted on.

STERLING, ILL.—It has been voted to construct two steel bridges on the Lyndon and Sterling Road, one over Deming Creek and the other over Lay Creek; bids are to be called soon.

MILWAUKEE, WIS.—Bids are asked until May 19 for constructing highway bridge over Menominee River. Chas. J. Poetsch, Comr. Pub. Wks.

MILWAUKEE, WIS.—The council committee has been considering the matter of securing the right of way for a viaduct at 35th St.

KANSAS CITY, KAN.—A viaduct is to be built over the railway yards at 10th St., at a cost of $120,000. The structure will be erected by the Union Pacific, the Rock Island and the Metropolitan railway companies, an agreement to that effect having been reached between them and the city. W. H. Craddock is Mayor.

NEBRASKA CITY, NEB.—Chas. H. Busch, County Clk., informs us that bids are asked until May 12 for constructing wooden bridges and for repairing bridges for one year. All bridges are to have 14-ft. roadways, and are to be from 20 to 100 ft. long, with 20-ft. to 26-ft. spans. Chas. Dorman, Chn. County Comrs.

WHITE SULPHUR SPRINGS, MONT.—The contract for erecting a bridge over Smith River has been let to the Minneapolis Steel Bridge Co. for $2,300.

GRANITE CITY, MO.—Reports state that the Granite City Electric Railway Co. will soon commence the erection of a viaduct over Cahokia Creek.

TACOMA, WASH.—Bids are asked until April 28 for construction complete of an iron or steel bridge, 350 ft. long, over the gulch adjacent to the city reservoir; the bridge to be used for supporting sewer and water mains. R. W. Clark, Comr. Pub. Wks. The Council has passed an ordinance authorizing the construction of the Puyallup River bridge, at a cost of $14,000.

ASTORIA, ORE.—Bids are asked until May 5 for construction and erection of a drawbridge over the Lewis and Clark River. Structure is to be a steel swinging draw with a clear span of 70 ft. on each side of the draw rest. The approaches are to be pile trestle with 16-ft. clear roadway. J. C. Clinton, County Clk.

PORTLAND, ORE.—The city engineer has been directed to make estimates for bridges over Marquam Gulch at First St., and over Sullivan's Gulch. For the latter location it is proposed to erect a single reinforced arch span steel bridge, with steel supporting piers 300 ft. apart.

CHICO, CAL.—Residents of Northern Glenn have petitioned the supervisors for bridge over the Sacramento, between Glenn and Butte counties.

EUREKA, CAL.—Supervisor Hindley has selected sites for the proposed pile bridge at Marshall over the North Fork and for the steel or combination bridge over the Mattole.

NEVADA CITY, CAL.—City trustees are said to be considering the construction of a steel bridge to replace the Gold Run bridge. The total cost would be $3,000, half of which would be borne by the Traction Co.

SAN ANDREAS, CAL.—Supervisors are to consider matter of constructing a bridge over Parrot's ferry, between Vallecito and Columbia.

WEISER, IDAHO.—We are informed that the governor has not yet appointed the commission for the proposed $50,000 bridge in this city. Thos. E. Kelly, Mayor.

FLAGSTAFF, ARIZ.—A report from here states that the River De Flag has carried away five foot bridges and three wagon bridges, all of which will have to be rebuilt.

PEMBROKE, ONT.—Reports state that the county council have appointed a committee to procure plans for a steel or iron bridge to be built over the Indian River on the Eganville Road.

PORT ELGIN, ONT.—Plans for the new Stirton bridge at Saugeen are being made by Robt. McDowall.

BUILDINGS.

NORTH CHELMSFORD, MASS.—Bids are asked by the county commissioners until April 18 for constructing laundry building at the truant school. H. P. Graves, Arch., Glidden Bldg., Lowell, Mass.

ANSONIA, CONN.—Bids are asked until April 25 for constructing a hose house for the Eagle Hose, Hook and Ladder Co., No. 6. A. H. Bartholomew, Clk.

HARTFORD, CONN.—Bids are asked by James Knox Taylor, Supervising Arch., Treas. Dept., Washington, D. C., until May 14 for constructing extension of custom house and post office, except heating apparatus and passenger elevator, as stated in our advertising columns.

BATAVIA, N. Y.—Bids are asked by board education, until April 27, for constructing brick school house. A. J. Squires, Clk.

BUFFALO, N. Y.—The Buffalo Realty Co. will erect a 6-story fireproof building at cost of $376,000. Cyrus Porter & Son, Archs., 73 West Eagle St.

BROOKLYN, N. Y.—Bids are asked by board education, Park Ave. and 59th St., New York, until April 20, for repairs, electric wiring and installing ventilating and heating apparatus in various schools.——Bids are asked by Fire Dept., 157 East 67th St., New York, until April 17 for erecting building for engine company No. 124 on Hicks St. Also for building on Jackson Ave. for hook and ladder company No. 6.——Competitive plans will be asked for the new municipal building, to cost $1,000,000. The sum of $32,000 will be appropriated for preparing plans and specifications.

NEW YORK, N. Y.—John Jacob Astor is having plans prepared for a 12-story apartment house at 78th and 79th Sts. and West End Ave.——W. T. Wardwell has donated the Red Cross Sisters a $100,000 site, upon which a 5-story hospital building wil lbe erected at cost of $70,000. White stone will be used.——An $80,000 station house will be built at Mosholu Parkway and Bronx Park.——Columbia University will have a 7-story dormitory at 124th St. It will be built by the Knowlton Hall Co. C. P. Northrup is interested.——Nelson Roberts is said to have stated that a new theatre will be built on 42d St.——Tiffany & Co. will erect an 8-story building, 100 x 150 ft., at 38th and 39th Sts. and Fifth Ave.

NEW YORK, N. Y.—Plans have been filed by Bernstein & Bernstein, Archs., 111 Broadway, for a 6-story brick tenement, 40 x 47 ft., at 80-82 Carmine St., for Katz & Wempie, 38 West 116th St., at cost of $35,000; by Bernstein & Bernstein, Archs., for a 6-story brick flat, 29 x 93 ft., at 306-8 Madison St., for L. Frank, 58 East Fourth St., at cost of $45,000; by Bernstein & Bernstein, Archs., for a 6-story brick flat, 50 x 62 ft., at 26-8 Broome St., for Stoller & Teitelbaum, 221 Henry St., at cost of $50,000; by G. F. Pelham, Arch., 503 Fifth Ave., for a 6-story brick tenement, 45 x 82 ft., at 332-4 East Fourth St., for M. Miller, 212 East 77th St., at cost of $46,000; by G. F. Pelham, Arch., for 4-story brick flat, 57 x 82 ft., at 13th St. and Avenue A, for Kessler, 68 West 118th St., at cost of $65,000; by Horenburger & Straub, Archs., 122 Bowery, for two 6-story brick tenements, 42 x 86 and 50 x 82 ft., at 276 to 282 Avenue A, for M. Gold, 1771 Madison Ave., at cost of $75,000; by Horgan & Slattery, Archs., 7 Madison Ave., for 6-story brick stable, 57 x 93 ft., at 533-5 West 24th St., for J. J. Duffy, 625 West 24th St., to cost $50,000; by C. C. Haight, Arch., 452 Fifth Ave., for 8-story brick warehouse, 100 x 74 ft., at 129-133 Hudson St., for Society for Promoting Religion, 62 William St., to cost $180,000; by R. H. Peffmuller, Arch., 21 West 42d St., for 6-story brick flat, 50 x 87 ft., at 124th St., for A. A. Adelman, 29 West 118th St., to cost $85,000.

LONG ISLAND CITY, N. Y.—Bids are asked by board education, Park Ave. and 59th St., until April 20, for completing public school No. 5, on Lockwood and Academy Sts.

SCRANTON, PA.—B. Wood writes us that contract for erecting the 5-story brick fireproof Y. M. C. A. building, 80 x 150 ft., will probably be let in October.

SCRANTON, PA.—Bids are asked by the Church of the Nativity for a new 1-story edifice, 50 x 100 ft., costing $75,000. Address Rev. J. A. O'Reilly.

PITTSBURG, PA.—We are informed that the club for working girls will be of brick and iron, five stories, 60 x 24 ft., and cost $200,000.——Samuel Hamilton will erect a 10-story building at 624-6 Penn Ave.

YORK, PA.—The county jail will be enlarged and repaired at a cost of $40,000.

WASHINGTON, D. C.—D. H. Burnham, Arch., has submitted the third set of plans for the new $4,000,000 union terminal station. It is understood that President Cassatt has approved the plans.

WASHINGTON, D. C.—Bids are asked by C. A. Didden, Arch., Corcoran Bldg., for an 8-story brick and steel fireproof hotel for Robt. Portner, to cost $300,000. Electric elevators and steam heat to be installed.

CHARLESTON, S. C.—Plans are being prepared and bids will be asked for constructing a fireproof building where works of art may be kept. Judge Simonton and J. A. Smith, trustees.

ATLANTA, GA.—A 10-story fireproof apartment house will be built on the site occupied by the Leyden House, on Peachtree St., to cost $300,000. Steel, brick, marble and terra cotta will be used. H. C. Bagley is interested. H. L. Walker, Arch.——The Fourth National Bank will erect a 14-story building.——The new post office building will be located on the site now occupied by the First Baptist Church on Forsyth St.

ALBANY, GA.—Bids are asked until May 4 for constructing $40,000 court house. T. F. Lockwood, Arch., Columbus Investment Bldg., Columbus.

BIRMINGHAM, ALA.—A new building for the Commercial Club is being discussed. L. Minor is interested.

JASPER, ALA.—Dobson & Bynum received the contract for erecting court house at $36,000.

LA FOLLETTE, TENN.—About $100,000 will be spent for erecting new county buildings.

NASHVILLE, TENN.—Sidney Lovell, Arch., is preparing plans for 14-story office building on Cherry St.——An appropriation of $75,000 has been made for a reform school in Shelby.

NASHVILLE, TENN.—Bids are asked by board of education until April 20 for constructing a school building on Cleveland St. Robt Sharp, Arch., Cole Bldg.

LOUISVILLE, KY.—The Stuart Steel & Iron Co. submitted the lowest bid for the new jail steel work at $102,000.

NEWPORT, KY.—Bids are asked until May 4 for installation of hot water system for court house. H. D. Phillips.

COLUMBUS, O.—E. J. Smith, New Hayden Bldg., writes that the contract for the Columbus Savings & Trust Co.'s Building will be let about June. Est. cost, $900,000.

CLEVELAND, O.—Andrew Carnegie has donated $250,000 for erecting seven branch libraries.

SPRINGFIELD, O.—Bids are asked by board public affairs until May 1 for erecting building to be used as a city prison, patrol house and workhouse. R. W. Lentz, Cy. Clk.

TOLEDO, O.—Bids are asked until May 1 for remodeling main dining-room and erecting annex to dining-room of the Toledo State Hospital. H. A. Tobey, Supt.

WILMINGTON, O.—Plans are being prepared for a new $200,000 court house.

CORNING, IND.—J. Foster Warner, Arch., Rochester, has submitted plans for the new court house, which were accepted. Brick, stone and terra cotta will be used.

FLINT, MICH.—T. J. Allen, Co. Clk., writes us that a new fireproof court house and a jail will be built at cost of $100,000.

NEWAYGO, MICH.—The court house may be enlarged at cost of $40,000.

CERRO GORDO, ILL.—B. F. Huff writes us that both the court house and jail will be fireproof, 84 x 110 ft., of stone, steel, brick and marble and cost $100,000. Steam heat to be installed. Contracts will be let in May or June. J. W. Royer, Arch.

ROCK ISLAND, ILL.—Bids are asked until April 20 for erecting 3-story county infirmary building. L. M. Drack, Arch., 18th St. and Second Ave.

MILWAUKEE, WIS.—Bids asked until April 28 for a branch police station on Allis St., and one at Third and Hadley Sts. C. Helms, Comr, Pub. Wks.

MILWAUKEE, WIS.—The Christensen Engr. Co. will erect a 66 x 201-ft. cement building, costing $50,000. Concrete hollow brick blocks will be used.——S. E. Gross will erect store and residence buildings at cost of about $100,000.

FORT DODGE, IA.—The Chicago Great Western Ry. will erect a $60,000 passenger depot on the site of the present depot, on Central Ave.

GRAND RAPIDS, MINN.—Bids are asked until May 8 for heating and plumbing in school building. T. D. Orff, Arch., Minneapolis. E. B. McCarthy, Clk. School Bd.

OLIVIA, MINN.—Bids are asked by board of education, until April 27, for erecting high school building. F. C. Orff, Arch., Minneapolis. J. M. Peckenpaugh, Clk.

SHAKOPEE, MINN.—Bids are asked by board county commissioners until May 8 for installing steam heating plant. J. H. Moore, County Audr.

ARVILLA, N. D.—Bids are asked by board of education until May 2 for erecting a 2-story frame school house. J. McSherry, Clk.

JAMESTOWN, N. D.—Bids are asked by trustees of the State Hospital for the Insane until May 5 for erecting the Ward building. C. F. Mudgett, Secy.

LITCHVILLE, N. D.—Bids are asked until May 1 for erecting brick bank building. C. Albrant, Arch., Fargo; A. P. Hanson, Cashier.

ST. LOUIS, MO.—Bids are asked by the building committee until April 29 for erecting the Illinois State Building, including plumbing, electric light wiring, sewerage, masonry, steel and iron work. Watson & Hazleton, Archs., 805 Plymouth Bldg., Chicago.

FAYETTEVILLE, ARK.—The contract for the new $75,000 court house has been let.

HOUSTON, TEX.—A 6-story brick office building will be erected by S. Westheimer costing about $30,000.

HOUSTON, TEX.—Bids are asked until April 20 for constructing passenger depot at Welsh, La., and at Jennings, La., and a brick roundhouse at Algiers, La. E. B. Cushing, Engr., M., L. & T. R. & S. S. Co.

WACO, TEX.—The new jail will be built on North Sixth St. and will cost about $30,000.

SEATTLE, WASH.—Cutter & Malmgren, Archs., Exchange Bldg., write us that brick and stone will be used in the construction of the new Rainier Club building, to cost $60,000. Contracts not yet let.——Competitive plans will be asked for the $200,000 library building.——Bebb & Mendel, Archs., have completed the plans for remodeling the Butler Hotel. Cost is estimated at $100,000. Also for a 6-story brick business block to cost $130,000. Otis electric elevators, steam heat and electric light plants will be installed.

SEATTLE, WASH.—F. A. Sexton, Arch., is receiving bids for erecting the Kent school building, exclusive of heating. Bids will be opened on April 25.

SPOKANE, WASH.—J. E. Cunningham has the contract for erecting a 4-story brick addition to the Holy Names Academy, at cost of $50,000.——A. W. Burrell, Oakland, Cal., received the contract for the new buildings at Fort Wright for $54,306.

TACOMA, WASH.—Judge W. H. Snell has designs for a 3-story building, to cost $65,000. Steam heating plant and two electric elevators will be installed.——P. A. Darner, Arch., California Bldg., has prepared plans for P. H. Hebb's pressed brick and stone building. Cornell Bros. have the contract at $40,000.

LOS ANGELES, CAL.—C. J. Kubach has been awarded contracts for constructing a series of buildings at cost of $50,635.——A. M. Edelman, Arch., Blanchard Bldg., has prepared plans for a brick building for Mrs. E. Isaacs, to cost $40,000. Two electric elevators will be installed.——Reports state that the Elks have had plans prepared for a 6-story building to cost $75,000.

SAN FRANCISCO, CAL.—It is stated that G. H. Schaefer, of the Golden State Bank, will erect a $60,000 building at California and Polk Sts.——Bush Bros., 896 Eddy St., will erect a 7-story brick building at Powell and Mason Sts. at cost of $100,000.——M. L. Cook, 809 Market St., will erect a 6-story brick building at Second and Mission Sts.——Local papers state that the board of education has asked for an appropriation of $1,949,726 for repairs to schools and erecting new buildings.——S. M. & C. W. Rosenbaum's 5-story semi-fireproof building, to be erected at Eddy and Taylor Sts., will cost $90,000. Terra

Information concerning contracts to be let or of supplies to be furnished, and corrections of errors and omissions in published items, are invited.

cotta and pressed brick will be used and steam heating plant installed. Salfield & Kohlberg, Archs., 339 Kearny St.——The West Side Christian Church building, to be erected on Bush St., will cost about $37,000.

FORT DOUGLAS, UTAH.—Bids are asked until May 4 for electric wiring, plumbing, heating and gas piping of two cavalry barracks, as stated in our advertising columns. Capt. S. V. Ham, Q. M., 621 Dooly Bldg., Salt Lake City.

PROVO CITY, UTAH.—Plans are being discussed for the addition to the state mental hospital, for which $55,000 has been appropriated. R. C. Watkins, Arch.

VANCOUVER, B. C.—A. E. Cook has received the contract for erecting the 4-story brick department store for Davidson & Woodward. The cost is estimated at $65,000.

DESERONTO, ONT.—Bids are asked until April 30 for constructing a school. W. J. Mallery, Secy. School Bd.

TORONTO, ONT.—The Toronto Opera House, recently burned, will be rebuilt by Messrs. Ambrose and Stair, at cost of $100,000. Arch. Painter, of Detroit, will prepare plans.——The Parks and Gardens Com. contemplate erecting a new stove building.

NEW CASTLE, N. B.—Bids are asked until May 1 for erecting a 2-story brick or stone building, 97 × 47 ft. H. B. McDonald, Arch., Chatham. John Menzies, Chn. Bldg. Com.

SACKVILLE, N. B.—Bids are asked for constructing a brick and stone addition to Mount Allison Ladies' College. B. C. Borden, Principal.

OTTAWA, ONT.—Bids are asked for the erection of the Carnegie Library. Aldermen Enwright, Hopewell and Seybold Bldg., Com.

BONDS.—The question of a $13,500,000 issue for buildings, sewers, etc., will be submitted to the people, San Francisco, Cal.——On April 18, Tacoma, Wash., will vote on a $200,000 issue for schools.——Colorado Springs, Colo., will issue $50,000 to pay for city hall.——Omaha, Neb., has authorized a $50,000 issue for city hall.——Detroit, Mich., will vote upon issuing $100,000 for court house.——Court house bonds amounting to $100,000 will be issued by Nashville, Tenn.——Memphis, Tenn., will issue $100,000 school bonds.——Newport News, Va., may issue $100,000 city hall bonds.——New York, N. Y., will issue $3,500,000 school bonds.

WATER SUPPLY AND IRRIGATION.

PORTLAND, ME.—Plans are under way for a standpipe 75 ft. high, to be erected on Munjoy Hill, for the Portland Water Co. at a cost of about $35,000. A large water main will also be put in.

PORTLAND, ME.—The council has been petitioned to take the necessary steps for municipal works.

FORT ETHAN ALLEN, VT.—The G. S. Blodgett Co., Burlington, Vt., at $4,650, was the lowest bidder for water and sewer extension at Fort Ethan Allen.

ABINGTON, MASS.—A $3,000 water main extension on Beulah St. has been voted.

ARLINGTON, MASS.—For extending water mains $3,000 has been voted. Edwin S. Farmer is Chn. Selectmen.

BRAINTREE, MASS.—It has been voted to extend the water system to the Holbrook line at a cost of $9,000. S. T. Stevens is Chn. Water Bd.

CONCORD, MASS.—$10,500 voted for extending works.

GREAT BARRINGTON, MASS.—It is stated that L. A. Weston, Adams, Mass., has a plan for furnishing this fire district with 1,500,000 gallons per day of artesian well water. The cost is not to exceed $17,000.

NEWBURYPORT, MASS.—The water commissioners are to sink artesian wells for an additional water supply. An auxiliary water main will be run from the pumping station to Spofford St., where it will be divided into two smaller mains.

TEWKSBURY, MASS.—We are informed that the town, at a recent election, failed to instruct the committee to secure an enabling act for obtaining works. The matter, however, will be taken up again before the next session of the legislature. F. C. Gerrish, Chn. Water Com., 66 Broadway, Lowell, Mass.

WALTHAM, MASS.—An order has been adopted appropriating $8,000 for water-works extension.

CROMPTON, R. I.—The contract for constructing storage reservoir on Huckleberry Hill and laying water mains has been let to C. N. Taylor, Wellesley, Mass. The bid for pipe laying was $3,100.

SOUTHINGTON, CONN.—We are informed that the Southington Water Co. expects to make a 2¼-mile extension to Milldale this summer. T. H. McKenzie is Engr.

HICKSVILLE, N. Y. (L. I.)—Committee has reported on matter of water supply for this place.

MILLBROOK, N. Y.—Chas. I. Swift, Village Pres., writes us that necessary maps, etc., are being made and preliminary action taken for new village works.

SCARSDALE, N. Y.—Reports state that the American Pipe Manufacturing Co., Fidelity Bldg., Philadelphia, are ready for bids for a 5,000,000-gallon reservoir at this place.

VICTOR, N. Y.—Works are under consideration.

WILMINGTON, DEL.—Reports state that the United States Sand Filtration Co., Stevenson Bldg., Indianapolis, Ind., has received the contract for constructing the proposed new water-works plant. The contract price is said to be between $600,000 and $700,000.

LYNCHBURG, VA.—James H. Fuertes, Cons. Engr., 140 Nassau St., New York, N. Y., has reported on gravity supply system for this place. It is said that Mr. Fuertes recommends the construction of a 60-ft. dam on Pedlar River, with a storage capacity of about 1,500,000,000 gallons; the laying of 22 miles of pipe—19 miles of wooden stave pipe, two miles of cast-iron pipe under streams and one mile of steel pipe for the highest pressure points. The total cost is placed at $710,000.

RICHMOND, VA.—Contracts aggregating about $75,000 for water-works improvements have been let as follows: Trenching, Vernon S. Goodwin; brass work, G. & A. Bargamin; wiping solder, G. & A. Bargamin; pig lead, fire hydrants and gate valves, Southern Railway Supply Co.; cast-iron pipes and special castings, Hunter Frischkorn; large valve boxes, Richmond Iron Works; small and meter boxes, McGhee & Pollard.

BENWOOD, W. VA.—Bids are asked until April 17 for material and labor for a covered concrete reservoir. Chapin & Knowles, Cons. Engrs., Canton, O.; Wm. Schofield, Supt. Benwood Water Co.

JACKSONVILLE, FLA.—R. N. Ellis, Supt., writes us that the following bids were received April 6 for centrifugal pump and induction motor: Morris Machine Works, Baldwinsville, N. Y., $2,079 f. o. b. shop; R. D. Wood & Co., Philadelphia, $2,250 f. o. b. Jacksonville; Lawrence Machine Co., 41 Cortlandt St., New York, $2,300 f. o. b. Jacksonville.

CLINTON, S. C.—Works and lights discussed.

GADSDEN, ALA.—R. A. Mitchell is stated to be interested in the company which proposes to begin work soon on a new water-works.

LANCASTER, O.—The contract for furnishing engine and pump for the new water-works has been let to the Bessemer Gas Engine Co., for about $5,200. J. B. Clow & Sons, Chicago, Ill.

SANDUSKY, O.—Bids are asked until April 20 for furnishing f. o. b. cars Sandusky, 400 ft. 8-in. and 2,500 ft. 6-in. cast-iron water pipe. Henry Dehnel, Secy. W.-W. Bd.

ANDERSON, IND.—The contract for a system of filtration beds for the American Strawboard Co. has been let to N. T. Burke and D. H. Durbin. The contract price is $10,000 and the plant is to be put in to prevent the pollution of the river by water from the factory.

ANDERSON, IND.—The council pure water committee is said to have decided to install a filtration plant of 9,000,000 gallons daily capacity at a cost of about $75,000.

CLINTON, IND.—It is stated that the supply of the proposed municipal works here is to be obtained from 60-ft. wells. A. F. Maltby, Fisher Bldg., Chicago, Ill., is Des. Engr. Mayor D. C. Johnson writes us that bids for the work, the estimated cost of which is $43,000, will be received until April 30. There will be about six miles of pipe line.

HOUGHTON, MICH.—F. W. Cappelin, Cons. Engr., 501 Oneida Block, Minneapolis, Minn., has been engaged to look into the advisability of the plans suggested for securing an additional water supply for this city.

MUSKEGON, MICH.—The Central Paper Co. will install a filter system for purifying the lake water to be used for manufacturing purposes.

MARINETTE, WIS.—A. P. Hillis, Cy. Engr., writes us that the proposition to buy the water-works carried at the recent election. A commission to agree upon a value will be appointed.

SHEBOYGAN, WIS.—It has been voted to build new works. Charles Born is Mayor.

REDFIELD, IA.—It is reported that $15,000 is to be spent on water and sewerage extensions.

GAS, KAN.—We are informed that the city has sold $30,000 of water bonds and has let a contract to J. D. Hawley, Topeka, Kan., for $28,000. The supply is to be piped from Iola, Kan., three miles away. Burns & McDonnell, Postal Telegraph Bldg., Kansas City, Mo., were Engrs.

HELENA, MONT.—Council has appropriated $12,000 for a water pipe on Main St., and $2,000 for an engineer to make plans and estimates for bringing water into the city from Beaver Creek.

CAMERON, MO.—Hiram Phillips, C. E., 301 City Hall, St. Louis, Mo., has been engaged to make plans and specifications for the proposed Baroo water system.

WINDSOR, MO.—Mayor C. F. Davis writes us that the proposition for water-works has not been voted upon yet, but doubtless will be in a short time. Burns & McDonnell, Postal Telegraph Bldg., Kansas City, Mo., are Engrs.

QUANAH, TEX.—The contract for sinking a well, 75 ft. deep and 10 ft. in diameter, has been let to W. H. Smith, Verron, Tex., for $989.50.

DENVER, COLO.—Bids are asked until April 23 for sinking a 6-in. well at Fort Logan, Colo. Lt.-Col. J. W. Pope, C. Q. M.

GOLDENDALE, WASH.—It is stated that the city will purchase the water-works of Hess & Cooper for $6,000. A new 250,000-gallon reservoir will be at once commenced.

POMEROY, WASH.—Bids are asked until April 21 for 5,000 10-in. 2 lap-weld steel pipe, 9,935 ft. 8-in. No. 1 lap-weld steel pipe, 300 ft. 4-in. No. 1 pipe; also seven 4-in. hydrants, three 10-in. and seven 8-in. gate valves, reducers, Y's, T's, etc. S. S. Russell, Cy. Clk.

TACOMA, WASH.—Bids are asked until April 27 for drilling and casing two wells and for furnishing and erecting two air compressors and two 75-HP. motors to operate same. The cost of the work is estimated at about $15,000. R. W. Clark, Comr. Pub. Wks.

EUREKA, CAL.—The Eureka Water Co. will improve its works at Humboldt at a cost of $40,000.

HOLLYWOOD, CAL.—It is stated that a reservoir for supplying water to the higher levels will be built soon on the hills north of West Whitley hill at a cost of about $8,500.

REDLANDS, CAL.—The city is considering purchase of works of Domestic Water Co.; also the construction of a storage reservoir in Bear Valley.

SAN FRANCISCO, CAL.—The contract for constructing the system of irrigating ditches for the Yolo County Consolidated Water Co. has been let to Bell & Snyder.

SUISUN, CAL.—F. Wm. Gabriel, Cy. Clk., writes us that $25,000 bond issue for extending reservoir and new water pipe was voted at a recent election. Reports state that five miles of 5-in. pipe will be laid.

FAIRVIEW CITY, UTAH.—Works discussed.

OGDEN, UTAH.—Council has passed a resolution to purchase, lease or condemn water-works, etc., of the Ogden Water-Works Co.

BISBEE, ARIZ.—Reports state that the Bisbee West Co. proposes to put in a water system at Lowell.

ALBION, IDAHO.—Works being discussed.

SHOSHONE, IDAHO.—Works under consideration.

CARLETON PLACE, ONT.—Willis Chipman, C. E., Toronto, Ont., has been engaged to make plans for works for this town.

STRATHROY, ONT.—Bids are asked until April 30 for pipe laying, pump house and for iron pipes and specials. Willis Chipman, Ch. Engr., 103 Bay St., Toronto, Ont.; R. P. Smith, Chn. Bd. El. Lgt. & W.-W.

BONDS.—Knoxville, Tenn., votes in May on issue of $705,000 municipal water plant bonds and $400,000 other improvement bonds.——Junea, Wis., is to vote on issue of water-works extension bonds.—Wood Lake, Minn., votes to issue $5,000 bonds for putting in works.——Plainview, Neb., voted April 7 on $7,200 bond issue for works.——Parker, S. Dak., will vote on $10,000 bonds for new works.——Volga, S. Dak., votes to issue $6,000 bonds, $2,000 of which are for works for fire protection.——Fargo, N. Dak., votes on issue of $22,000 for works.——Brinkley, Ark., is asking bids until April 19 for $24,500 water bonds.——The Eureka Water Co., Eureka, Cal., is to issue $150,000 of bonds.——The Citizens' Water, Light & Power Co., John Carril, Pres., Long Beach, Cal., will vote May 21 on $100,000 bond issue.——Central Canal & Irrigation Co., 230 California St., San Francisco, Cal., will vote June 8 on $1,000,000 bond issue. Willard M. Sheldon is Secy.——Sinsun, Cal., votes $25,000 bond issue for extensions, reservoir and new pipe. F. Wm. Gabriel, Town Clk.——Phoenix, Ariz., voted April 15 on $300,000 bond issue for municipal works.

SEWERAGE.

DEDHAM, MASS.—Five thousand dollars has been appriated for sewers.

HUDSON, MASS.—A meeting will be held April 20 to discuss a sewer system. An appropriation of $150,000 will be asked.

LOWELL, MASS.—Petitions have been received for sewers in various streets. The sewer committee has recommended $50,000 for the completion of the Court and Tanner St. sewers.

NORTH ADAMS, MASS.—A sewer system is being discussed for Harrison and Summit Aves.

QUINCY, MASS.—An appropriation of $30,000 may be made for extending the sewer system.

SALEM, MASS.—A sewer system may be built, to cost about $1,000,000.

SWAMPSCOTT, MASS.—The sum of $50,000 has been appropriated for the sewer system.

SUNDERLAND, MASS.—F. L. Whitmore, Chn. Selectmen, writes us that Main St. sewer will be 6,500 ft. of 10-18-in. pipe, with average cut of 6 ft., and cost $5,000.

WOONSOCKET, R. I.—Bids are asked by board sewer commissioners, until April 20 for constructing about 2,670 ft. of 8 to 10-in. pipe sewers. F. E. Holden, Sewer Comr.

HARTFORD, CONN.—Over $100,000 will be spent this year on the construction of sewers.

ALBANY, N. Y.—Bids are asked by board of contract and supply, until April 20 for constructing 1,356 ft. of 12-in. pipe sewer in various streets.

NEW YORK, N. Y.—Bids are asked by the borough president, City Hall, until April 21 for constructing 875 ft. of brick sewer, 3½ × 2¼ ft. diameter, and excavating 500 cu. yds. of rock.

NEW YORK, N. Y.—Bids are asked by the president of Queens borough, Jackson Ave. and Fifth St., until April 16, for constructing 5,179 ft. of pipe sewer, 6-24 ins. in diameter, and furnishing seven receiving basins and 34 manholes.

LONG ISLAND CITY, N. Y.—Bids are asked by Joseph Cassidy, Pres. Boro. Queens, until April 16, for construcing about 5,005 ft. of 6-24-in. pipe sewer, and furnishing 34 manholes, etc.

ONEIDA, N. Y.—The board public works has decided to construct sewers in South Willow and Stone Sts. and Washington Ave.

OSWEGO, N. Y.—Bids are asked by clerk water department until April 20 for constructing sewer in Sixth St.

TROY, N. Y.—Bids are asked by board sewer commission until April 27 for constructing submain, lateral sewers, manholes, flush-tanks, etc. H. Allen, Secy.

UTICA, N. Y.—A sewer on Blandina St. is planned.

SOUTH BETHLEHEM, PA.—Between $100,000 and $200,000 will be spent on sewers this year.

CLIFTON HEIGHTS, PA.—The sewer question is being discussed.

CULPEPER, VA.—A. F. Brown, Engr., writes us that J. M. Calvin received the contract for constructing the sewer system.

JOHNSON CITY, TENN.—A $40,000 sewer system is talked of.

BOWLING GREEN, O.—Bids are asked until May 9 for constructing cylindrical pipe sewer. A. Williamson, Cy. Clk.

GLENVILLE, O.—Bids are asked until May 4 for constructing sewers in St. Clair St. B. J. Davies, Jr., Village Clerk.

PLAIN CITY, O.—Bids are asked until April 24 for constructing main, sub-main and lateral sewers. J. R. Woods, Village Clk.

PORTSMOUTH, O.—Bids will be received for constructing a sewer near Fourth St. Cost is estimated at $2,100.

SANDUSKY, O.—The following bids were received for constructing the west end sewer: M. Callan, $4,785, and Schultz & Schieber, $5,640. Both will probably be rejected, being too high. Estimated cost, $3,776.

WELLSVILLE, O.—The matter of laying sewers has been given in charge of Engineer Leith. There will be between 2,000 and 3,000 ft. of sewer laid.

CONNERSVILLE, IND.—Bids are asked by council until May 1 for constructing about 7½ miles of 6-in. to 4 ft. brick and pipe combined storm and sanitary sewer system, with necessary catchbasins, manholes, etc., as stated in our advertising columns. K. L. Harson, Cy. Engr.

EAST CHICAGO, IND.—Bids are asked until April 20 for constructing an 18-in. tiled sewer. H. E. Jones, Cy. Clk.

HAMMOND, IND.—See Streets and Roads.

PORT HURON, MICH.—Bids are asked by board public works until April 18 for constructing sewer in Thomas St. R. D. O'Keefe, Supt. Pub. Wks.

SAGINAW, MICH.—The cost of necessary sewers this year will amount to about $55,535.

ROCK FALLS, ILL.—A sewer system 20,000 ft. long is contemplated.

ROCKFORD, ILL.—Bids are asked by board local improvements, until April 23, for constructing about 3,400 ft. of 9 to 20-in. sewer. A. Hutchins, Pres.

GREEN BAY, WIS.—The common council has voted to expend $65,000 in sewer improvements.

DULUTH, MINN.—City Engineer Patton has prepared plans for a sewer system on Garfield Ave. For $12,000 the sewage could be forced through pipes by means of compressed air.

ST. PAUL, MINN.—The city engineer finds that the St. Anthony Park sewer system will cost $250,000 instead of $150,000.

OLATHE, KAN.—Bids are asked until May 5 for constructing 4,980 ft. of 8-24-in. pipe sewer, and furnishing eight manholes in lateral Dist. No. 2. C. F. Garwood, Cy. Clk.

ABERDEEN, S. D.—D. C. Washburn, Cy. Engr., writes us that bids are asked until May 1 for constructing about 8,800 ft. of sewer. Cost is estimated at $12,000.

BURLINGTON, KAN.—Burns & McDonnell, Engrs., Postal Telegraph Bldg., Kansas City, Mo., write us that the date of opening bids has been postponed from April 1. The new date of opening will be announced later.

ST. LOUIS, MO.—Bids are asked by E. A. Herman, Sewer Comr., until April 28 for sewer construction in this city, as follows: Blackstone public sewer, 1,610 lin. ft. of 12½ × 15-ft. brick sewer and 2,100 ft. 9-ft., average cut 22 ft., estimated cost, $120,000; Blackstone joint sewer, 3,210 ft., 9-ft. brick, 20-ft. cut, $65,000; Blackstone district sewer, 7,674 lin. ft. brick, 2 × 3 ft. egg-shape to 7-ft. diameter, and 51,700 lin. ft. pipe sewer from 12 to 24-in. diameter, average cut 16 ft., estimated cost, $132,000; Rock Spring district sewer, 3,070 ft., 5 to 6½ ft. brick, and 34,730 ft. pipe sewer, 12 to 24-in., 15-ft. cut, estimated cost, $116,000.

Information concerning contracts to be let or of supplies to be furnished, and corrections of errors and omissions in published items, are invited.

BEAUMONT, TEX.—Bids are asked until May 5 for constructing brick and pipe sewers, at cost of $75,000, as stated in our advertising columns.

FORT SAM HOUSTON, TEX.—Bids are asked by the chief quartermaster, until May 1 for extending the sewer system at Fort Clark, Tex.

GALVESTON, TEX.—The board public works has recommended that the Hogan St. sewer contract be awarded to A. N. Fitzgerald for $3,700.

SAN ANTONIO, TEX.—Bids are asked until May 1 for extending sewerage system at Fort Ringgold. John L. Clem, D. Q. M. G.

SEATTLE, WASH.—City Engineer Thomson's estimate for constructing the sewer system on Queen Anne Hill is $22,800.

SPOKANE, WASH.—The building of a $70,000 sewer system in district No. 2, which lies between Summit and Chestnut Sts. and Broadway and Boone Ave., has been protested.——A. G. Gill, Cy. Engr., has completed plans for $100,000 extension of underground drainage.——Jas. Broad received contract for additions to Nettleton sewer system for $69,000.

LOS ANGELES, CAL.—Bids will soon be asked for furnishing about 15,000,000 sewer brick and about 40,000 bbls. of cement. City Engineer Stafford will prepare specifications.

OAKLAND, CAL.—It is stated that the street committee has approved City Engineer Turner's estimate of $16,325 for sewers on Telegraph Ave.——Sewers will probably be constructed on Broadway and 37th St.

OGDEN, UTAH.—Sewers will be constructed at cost of $55,000. W. J. Critchlow, Cy. Recorder.

WOODSTOCK, ONT.—F. J. Ure, Civil Engr., writes us that bids will be asked in about a month for constructing a trunk sewer and disposal plant.

BONDS.—Redwood City, Cal., will vote May 2 a $40,000 issue. S. E. Slade, Secy. Sewer Com.——Birmingham, Ala., will issue $85,000 bonds, $75,000 for sewers and $10,000 for street improvements.

GARBAGE DISPOSAL—STREET CLEANING

ALBANY, N. Y.—Bids are asked by the board of contract and supply for removal of ashes and rubbish from public school houses. Isidore Wachsman, Clk.

NEW YORK, N. Y.—Fire is stated to have damaged the storage and tankage frame sheds of the New York Sanitary & Utilization Co. on Barren Island to the extent of about $20,000.

MONESSEN, PA.—Reports state that $75,000 has been appropriated for a garbage plant.

INDIANAPOLIS, IND.—Howard Smock, Sprinkling Inspector, writes us that bids for sprinkling unimproved streets will be opened April 17 by the board of public works.

SOUTH BEND, IND.—The board of public works is stated to favor the erection of crematory. W. A. McInerney is Pres.

ST. JOSEPH, MO.—The matter of a franchise for garbage disposal is under consideration. Councilman Crandell is Chn. Health Bd.

STREETS AND ROADS

AMHERST, MASS.—Engineer Packard, state highway commissioner, states that $20,000 will be spent on the roadway between Northampton and this place.

BROOKLINE, MASS.—The sum of $50,000 has been appropriated for widening Harvard St.

CHICOPEE, MASS.—$2,500 appropriated for paving Chicopee St.

CAMBRIDGE, MASS.—An appropriation of $10,000 has been made for completing Monroe St. Various other streets will be improved.

DENNIS, MASS.—Bids are asked until April 17 for building three sections of macadam road, the approximate distance being 3¼ miles. C. F. Baker, Selectman.

NEWBURYPORT, MASS.—The committee on highways has recommended the paving of Ashland, Purchase and other streets with crushed stone. Cost estimated at $4,550.

PLYMOUTH, MASS.—The committee has recommended an appropriation of $3,000 for sidewalks and $16,000 for roads and bridges.

WESTFIELD, MASS.—O. E. Parks, Town Engr., has estimated the cost of paving Park Square with asphalt at $25,700; brick, $22,500, and macadam, $7,000.

CANANDAIGUA, N. Y.—The cost of paving Main St. with brick is estimated at $151,950, and with macadam at $118,416.

BROOKLYN, N. Y.—Bids are asked by the Borough President, Municipal Bldg., until April 22, for furnishing 1,254,000 lbs. of paving pitch.

ELMIRA, N. Y.—Bids are asked by James Knox Taylor, Supervis. Arch., Treas. Dept., Washington, D. C., until May 11, for approaches at north side post office and court house, as stated in our advertising columns.

LONG ISLAND CITY, N. Y.—A new park in the neighborhood of East Ave., Van Alst Ave., Ninth and 12th Sts., is being discussed.

NEWBURG, N. Y.—D. J. Contant, Cy. Clk., writes that the following bids were received March 23 for paving a portion of Broadway: (1) Mack brick; (2) Porter; (3) Clearfield; (4) Montello: Russel Contracting Co., 156 Fifth Ave., New York (awarded contract), (1) $50,051, (2) $50,651, (3) $49,396; F. A. Malette, Geneva, (1) $50,601, (2) $50,225, (3) $50,225; Miles-Fehr Contracting Co., Easton, Pa., (1) $51,917, (2) $51,430, (3) $51,332, (4) $51,137; Michael F. Dollard, Albany, (1) $59,493; Frank Pidgeon, Saugerties (2) $59,143.

WATERTOWN, N. Y.—Bids are asked until May 1 for constructing about 19,200 sq. yds. of bituminous macadam waterproof pavement, 1,500 ft. of limestone curbing and relaying 6,700 ft. old curbing, as stated in our advertising columns. C. O. McComb, Cy. Engr.

CAPE MAY, N. J.—Bids are asked until April 28 for constructing 12,500 ft. of broadwalk and beach drive. J. Halpin, Pres. Council.

PEQUANNOC, N. J.—Bids are asked by the board freeholders until May 4 for macadamizing a section of the Newark and Pompton turnpike, as stated in our advertising columns. G. A. Becker, Dir. Bd. Freeholders, Morristown.

WASHINGTON, D. C.—Sherman St. will be macadamized at cost of $2,000, and Swann St. at $1,024.

TAMPA, FLA.—Bids are asked by board public works until April 21 for paving 4,500 superficial yds. with brick and curbing 2,600 ft. on Fortune St. W. R. Fuller, Pres.

SHREVEPORT, LA.—Nine miles of asphalt paving will be done at cost of $533,000.

ALEXANDRIA, LA.—Bids are asked until May 12 for paving 19,000 sq. yds. with asphalt, 8,500 sq. yds. with brick, on Third St., and 10,500 sq. yds. with brick on Jackson St., as stated in our advertising columns. F. M. Welch, Mayor.

NEWPORT, KY.—The improvement committee has decided to pave Orchard, Ann, Eighth and Ninth Sts. with brick.

CINCINNATI, O.—Bids are asked until May 1 for paving and constructing drains on Fairfax Ave.

COSHOCTON, O.—The city council has decided to pave Fourth St. with asphalt and construct sewer. Also sewer in Sixth St.

LIMA, O.—East Lima St. will be paved with brick and drained at cost of $8,261. Also East Hardon St., at cost of $4,474. F. C. Ray, Cy. Clk.

LIVERPOOL, O.—The paving of Lisbon St. will be taken up by the council.

MOUNTVILLE, O.—The construction of macadam roads is contemplated. Also throughout the county. County commissioners have charge of the matter.

MARYSVILLE, O.—Mayor Hamilton is reported to have stated that North Wall St. would be paved with brick.

SALEM, O.—G. D. Smith received the contract for paving with asphalt and brick in various streets at about $30,142. Also sewers on Broadway and Howart St. for $4,263.

TOLEDO, O.—Petitions for paving Ontario, Beech and Hawley Sts. have been taken out of the engineer's office.

TOLEDO, O.—The following low bids have been received by the city engineer for paving on Starr Ave., from East Broadway to Dearborn St.: H. G. Jennison, Harris pavers, Athens, Logan, Nudol, Metropolitan, Wassall and Nelsonville, at $21,420, $21,833, $21,695, $21,833, $21,833, $21,833 and $22,109 respectively; Garrigan Bros., concrete foundations, $28,164; C. H. Burchinal, asphalt block, $35,401, and broken stone, $37,054.——Petitions for paving Ontario, Beech and Hawley Sts., have been taken out at the engineer's office.

FORT WAYNE, IND.—City Engineer Randall has stated that 59,622 sq. yds. will be paved this season.

HAMMOND, IND.—Bids are asked until April 21 for about two miles of macadam pavement and 800 ft. of 18-in. tile sewer and 1½ miles of 3 ft. brick sewer. W. F. Bridge, Engr.

INDIANAPOLIS, IND.—The council committee will advertise for bids for 10,000 sq. yds. of granite blocks and artificial curbing.

RUSHVILLE, IND.—Bids are asked until April 21 for paving sidewalk with cement. A. L. Stewart, Cy. Engr.

TERRE HAUTE, IND.—Brick will probably be used in paving Fourth and Eighth Sts.

VINCENNES, IND.—Council orders two miles of brick paving on business streets.

WINCHESTER, IND.—Brick paving is being discussed.

DETROIT, MICH.—A part of Michigan Ave. will probably be paved with brick this season at cost of $17,000. Other streets will be paved.

GRAND RAPIDS, MICH.—James McDermott & Sons awarded contract for paving Wealthy Ave. with Nelsonville block at $40,545.

SAGINAW, MICH.—Bids have been rejected by the county good roads committee for macadamizing the Watrousville and Michigan roads. The work will be done by day labor.

MILWAUKEE, WIS.—C. J. Poetsch, Cy. Engr., has prepared plans and specifications for asphalt paving in various streets.——The board public works is preparing to let paving contracts. About $200,000 will be spent this year.——The property owners of Commerce St. have decided to use granite block for street pavement.

OSHKOSH, WIS.—Considerable asphalt paving will be done this year.

DULUTH, MINN.—Bids will soon be asked for paving Second Ave. with sandstone blocks at cost of $12,114.

ST. PAUL, MINN.—Bids will soon be asked for paving University Ave. with asphalt and East Seventh St. with brick. The cost is estimated at $45,443 and $45,788, respectively.

FLORENCE, NEB.—E. D. Van Court and Winn Co. received the contract for paving Florence Boulevard for $12,000.

KANSAS CITY, MO.—The macadamizing of three country roads has been authorized by the board of county commissioners.

ST. JOSEPH, MO.—Ashland Road will be macadamized this summer at cost of $15,000. Other roads will probably be improved in similar manner. Judge Duncan is interested.

BEAUMONT, TEX.—City Engineer Yeater has nearly completed the plans and specifications for street paving and sewerage system. There will be about two miles of paving.

BEAUMONT, TEX.—Bids are asked until May 5 for paving 80,669 sq. yds. on various streets with asphalt or brick, and curbing 28,202 ft., as stated in our advertising columns. W. A. Ives, Cy. Secy.; T. H. Langham, Mayor.

GALVESTON, TEX.—City Engineer Dormant has prepared estimates for street paving.

LOS ANGELES, CAL.—Reports state that asphalt pavement for Pico St. is being considered. Grand Ave. also needs paving.

OAKLAND, CAL.—F. C. Turner, Cy. Engr., writes us that 15,000 sq. yds. of bitumen will be laid on San Paolo Ave., costing $90,000.

BOISE, IDAHO.—Reports state that bids are wanted for paving Eighth St. with brick. Wm. V. Helfrich, Cy. Clk.

BONDS.—Mill Valley, Cal., will vote on $50,000 road and sewer bonds.——Beaumont, Tex., may issue $200,000 for public roads.——Bids asked until April 20 for purchase of $50,000 sidewalk bonds of Solvay, N. Y.——New York, N. Y., will issue $3,500,000 bonds for street paving.

MANUFACTURING PLANTS.

NEW BEDFORD, MASS.—The United States Silk Co. may erect a plant.

CAMDEN, N. J.—The Berlin Construction Co., of Newark, received the contract for erecting the Whitney Car Wheel Co.'s plant for $110,000.

PATERSON, N. J.—The Passaic Steel Co., successor to the Passaic Rolling Mill Co., and who acquired the plant of the latter company at Paterson in February of this year, has had plans prepared for a new steel plant in connection with the existing one, which call for 12 50-ton open-hearth furnaces, a blooming mill, finishing structural mill with the necessary gas producers, coal storage plant, boiler house and power plant, with a total capacity of 300,000 tons per annum of finished structural steel shapes. At present the company is building two of these furnaces to be ready for operation July 1. The contract for the excavation, clearing of lands, removing old buildings and putting in foundations in connection with the above works has been placed with J. W. Ferguson, Paterson; the brick work on the furnaces with the Porter-Miller Engineering Co., Pittsburg; the electrical cranes, etc., with the Morgan Engineering Co., Alliance, O.; the electrical work with the Westinghouse Co., Pittsburg, and the engines with the Buckeye Engine Co., Salem, O. The steel work for the buildings will be made in the company's shop at Paterson. The company is contemplating the removal of its present bridge shops to a new location and the construction of a modern bridge shop plant with a capacity of 3,000 to 4,000 tons per month. Geo. H. Blakely is Ch. Engr. and Gen. Contract Mgr.

BETHLEHEM, PA.—Reports state that the Bethlehem Steel Co. will build additions.

EDDYSTONE, PA.—Bids are asked by the Valentine Engr. Co., West End Trust Bldg., Philadelphia, for erecting a 1-story concrete and steel plant, 500 ft. long. Cost estimated at $200,000.

HARRISBURG, PA.—Bids are asked for 3-story brick factory, costing $15,000. F. C. Hamilton, Arch., 409 Market St.

LANCASTER, PA.—The Mast Mfg. Co., Lititz, will build a 3-story brick, slow-burning factory.

PITTSTON, PA.—The Howell & King Co. will soon have work started on a 3-story brick slow-burning addition.

PHILADELPHIA, PA.—Heacock & Hokanson, Archs., 931 Chestnut St., will soon award contract for 4-story brick, slow-burning factory, 40 × 50 ft., at Broad and Cherry Sts.

NEWCASTLE, PA.—A steel castings plant will be erected. P. McManus is interested.

YORK, PA.—The Spring Garden Brick Co. contemplates erecting a new plant. Address C. D. Frey.——The York Bridge Co. will erect a brick, with steel frame, malleable iron foundry building.——The Monarch Silk Co. will erect 3-story brick slow-burning addition to silk mill.

SOUTH WILMINGTON, DEL.—The Tide-Water Building Co., No. 25 West 26th St., New York, has been awarded the general contract for the following buildings for the new plant of the Wilmington Malleable Iron Co., at South Wilmington: Annealing house, 300 × 541 ft.; foundry, 219 × 574 ft.; duplicate foundry building, 219 × 571 ft.; core building, 75 × 300 ft.; gas producer building, 20 × 165 ft.; carpenter and machine shop, 77 × 298 ft., two stories; pattern safe, 83 × 115 ft., one story; engine room, 45 × 140 ft.; boiler room, 60 × 120 ft.; office building, 50 × 50 ft., two stories; steel frames throughout, with concrete roofs and brick side walls. Contract includes all masonry, carpentry, iron work, roofing, painting, grading, fences (of which there is to be over one mile), sewerage, glazing, metal work, hardware, stacks, etc. Cost of plant, including machinery, $1,000,000. Work started April 1; two-thirds of the buildings to be completed and in operation by Nov. 1st.

RICHMOND, VA.—A 5-story baking plant, 60 × 210 ft., will soon be erected. Ferdinand Block and G. J. Schelfela, Philadelphia, are interested.

CLARKSBURG, W. VA.—The Clarksburg Brewing Co. will erect a 6-story brick and iron brewery at cost of $270,000. Geo. Eckert is Pres.——Ramsey & Gore Mfg. Co. will erect a silk factory at cost of $157,000.

CHARLOTTE, N. C.—The Mecklenburg Cotton Mills will probably erect a mill. C. W. Coleman, Pres., Whitmires, S. C.

SPRAY, N. C.—Plans are being prepared by O. A. Robbins & Co., Charlotte, for a four-set woolen mill for the Spray Woolen Mills.

CATEECHEE, S. C.—Reports state that the Morris Cotton Mills Co. will add 5,000 spindles and more looms, at cost of $100,000. D. A. Tompkins Co., Engrs., Charlotte, N. C.

PAULINE, S. C.—A company has been organized to build a cotton mill. E. D. Forest, Fair Forest, S. C., is reported as Pres.

BRUNSWICK, GA.—The Mohawk Valley Steel & Wire Co. will erect a $10,000,000 plant.

CARTERSVILLE, GA.—A site has been located for a $1,500,000 cemnt plant, with a capacity of 1,000 bbls. per day.

CORDELE, GA.—John Blood & Co., Philadelphia, Pa., may locate knitting mill at this place.

LINDALE, GA.—Reports state that the Massachusetts Mills will erect a $500,000 mill. Lockwood, Greene & Co., Boston, will probably be the architects.

MILLEDGEVILLE, GA.—J. C. Harrington, New York, will probably erect a $300,000 towel factory.

MACON, GA.—A combination oil mill, fertilizer works and ice works will probably be built.——A mill may be erected.

GAINESVILLE, GA.—W. A. Matheson, Toccoa, writes us that the cottonseed oil mill will be a 40-ton plant, of brick and sheet iron and equipment will cost $30,000. Contract for machinery will be let in a few days.

WAYCROSS, GA.—The South Atlantic Car & Mfg. Co.'s plant will be 1,700 × 550 ft., consisting of seven wooden buildings, and will cost $76,454, including equipment. It will be located at Albany Ave. and O St. and will employ about 200 men. Bids for material will soon be asked. Secretary Burnet, Johnson Bldg.

ANNISTON, ALA.—The glass factory will be located at Noble and Fourth Sts. The site is 994 × 350 ft.

DEMOPOLIS, ALA.—L. H. Conrad, Monroe & Conrad, informs us that a Portland cement plant is proposed and will likely be built on the Tombigbee River, about one mile west of this town. Mr. Conrad wants to communicate with manufacturers of cement machinery.

HUNTSVILLE, ALA.—The Flint Construction Co., received the contract for erecting the Merrimack Mfg. Co.'s mill.

CORINTH, MISS.—Efforts are being made to organize a company to erect a cotton mill.

SPARTA, TENN.—A knitting factory may be located at this place, which would employ 50 hands.

CANAL DOVER, O.—The Pittsburg Engineering Co. received the contract for erecting the plant and installing the machinery for the Standard Motive Power Co. for $1,300,000. H. McNutt, Pres., New York, N. Y.

AKRON, O.—The consolidation of the Wellman-Seaver-Morgan Engineering Co., Cleveland, and the Webster, Carup & Lane Co. has been effected. Both plants will be enlarged at cost of $1,000,000. S. T. Wellman is Pres.

HAZELTON, O.—The Youngstown Car Mfg. Co. will enlarge plant in order to manufacture steel cars instead of wooden ones. A. C. Blair, Secy.

FRANKFORT, IND.—The Frankford Ice & Cold Storage Co. will erect a new plant. G. W. Neal is interested.

Information concerning contracts to be let or of supplies to be furnished, and corrections of errors and omissions in published items, are invited.

OSCEOLA, O.—The Goshen Foundry Specialty Co., Goshen, Ind., will erect a plant.

INDIANAPOLIS, IND.—G. M. Conners, Mgr., writes us that the Jenny Electric Mfg. Co. will build a new factory and install new machinery at cost of $100,000. C. D. Jenney is Pres.——Bids will soon be asked for erecting school buildings. C. W. Moores, Secy. School Bd.

MUNCIE, IND.—Plans are being prepared for the American Sheet Steel Co.'s addition to plant. Cost estimated at $50,000. Also for $20,000 gas station.

TERRE HAUTE, IND.—The Terre Haute Shovel Works have been destroyed by fire, with loss of $60,000. Plant will be rebuilt.

JERSEYVILLE, ILL.—The loss by fire to the Whitehall Sewer Pipe & Stoneware Co.'s plant is estimated at $100,000. Plant will probably be rebuilt.

PEORIA, ILL.—The American Mfg. Co.'s new plant will have capacity of from 500 to 1,000 bbls. daily and cost $250,000.

ST. LOUIS, MO.—Plans are being drawn for the G. V. Brecht Co.'s 2-story warehouse and factory, 200 x 125 ft., at 12th and Mullanphy Sts., costing about $40,000. J. L. Wees, Arch., 520 Olive St.——J. L. Wees, Arch., writes us that the Manewal Lange Biscuit Co.'s brick and stone plant will be 290 x 150 ft., and need engine, boiler, dynamos, and cracker machinery.

TEMPLE, TEX.—J. W. Wright, Secy. Bd. Trade, has received a proposition from Houston men to erect a $200,000 cotton mill.

SPOKANE, WASH.—A $75,000 cider factory will be erected by W. D. Carlisle, Chicago.

TACOMA, WASH.—The Capitol Box Co. will erect two mills at cost of $125,000.

ASTORIA, ORE.—Frank Patton is said to be interested in a company which will erect a mill with capacity of 100,000 ft. per day.

RIVERSIDE, CAL.—The proposition to establish a $50,000 glass factory is being agitated.

STOCKTON, CAL.—A site has been purchased for erecting a bottle factory.

DARTMOUTH, N. S.—The Dominion Milling Co. will probably erect a linen mill. The main building will be 800 ft. long. Two 56-HP. boilers will be required.

NELSON, B. C.—Work will soon start on the Canadian Pacific Ry. Co.'s repair shops. The main building will be 71 x 100 ft. Modern machinery will be installed.

VANCOUVER, B. C.—The Alberta Lumber Co. will construct a sawmill on False Creek, with capacity of 25,000 ft.

MISCELLANEOUS CONTRACTS.

CEMENT MACHINERY.—Demapolis, Ala.—(See item under Manufacturing Plants.)

GRAND STAND.—Brunswick, Me.—Bowdoin College is to erect a $30,000 grand stand.

LEVEE.—Waco, Tex.—This city contributes $1,500 toward the mile-long levee in East Waco.

SMELTER.—Huntington, Ore.—It is reported that a smelter will be built at the Iron Dyke mine.

STREET SIGNS.—St. Mary's, O.—Bids are asked until April 23 for furnishing street signs. C. T. Hopper, Village Clk.

BULKHEAD.—Fort Getty, S. C.—Bids are asked until April 23 for constructing timber bulkheads. Leo F. Foster, Q. M.

FIRE BOAT.—Portland, Ore.—Plans for the proposed new boat for the fire department are being drawn up by Fred. A. Ballin.

CANAL.—Los Angeles, Cal.—The California Development Co. is to have a 40-ft. canal constructed for a distance of about 14 miles.

MINING MACHINERY.—Fort Steele, B. C.—The East Kootenay Copper Mining Co. may equip their mine with machinery this summer.

CONCENTRATOR.—Townsend, Mont.—Robert Dell is said to contemplate putting in a concentrator at the East Pacific mine this spring.

DREDGING.—Santiago de Cuba.—For a dredging contract involving some 1,500,000 cu. yds. see under U. S. Possessions and Cuba in this issue.

FENCING.—Gettysburg, Pa.—Bids are asked until June 30 for fencing the Gettysburg battlefield. John P. Nicholson, Chn. Gettysburg National Park Comn.

PIER WORK.—Canandaigua, N. Y.—Plans for the improvement of the long pier at the lake have been made. They involve the expenditure of about $3,500.

CRIB PIERS.—Sheboygan, Wis.—N. J. Gaylord, Ludington, Mich., has secured the contract for building crib piers at Sheboygan Harbor, Wis., for $64,263.

PILE BRIDGE ROADWAY.—Seattle, Wash.—The contract for building the pile bridge roadway on Railroad Ave. has been let to Willis H. White for $28,737.

FIRE ALARM SYSTEM.—New York, N. Y.—Mayor Low has approved an ordinance appropriating $12,000 for establishing a fire alarm system in the Borough of Richmond.

DREDGING.—New London, Conn.—Bids are asked until May 15 for dredging in New London Harbor, as stated in our advertising columns. Maj. Chas. F. Powell, U. S. Engrs.

DOCK WORK.—Chicago, Ill.—Bids are asked by the public works department, 222 City Hall, until April 17, for constructing 127 ft. of new dock. F. W. Blocki, Comr. Pub. Wks.

MINING WORK.—Sumpter, Ore.—The contract for completing 500 ft. of cross-cut to tap the ore shaft on the 250-ft. level of the Gold Bug property has been let to Walter Crone.

DREDGING.—New York, N. Y.—Bids are asked by the Commissioner of Docks, Battery Pl., until April 21, for dredging in the East and Harlem rivers. McDougall Hawkes, Comr.

FAIRHAVEN, MASS.—The contract for filling in the mill pond and transforming it into a public park has been let to W. B. Munroe, Boston, Mass. The contract involves about $40,000.

STONE CRUSHER.—Nashville, Tenn.—The contract for building a stone crushing plant for the Nashville Railway Co. has been let to Foster & Creighton. The plant will cost about $12,000.

DREDGING.—New York, N. Y.—Bids are asked until May 15 for dredging in Hudson River and Saugerties Harbor, N. Y., as stated in our advertising columns. Col. Amos Stickney, U. S. Engrs.

ELEVATORS.—Washington, D. C.—The following bids were received April 4 for furnishing and installing two freight elevators with hydraulic operating engines at the Trumbull St. pumping station: Warner Mfg. Co., Cincinnati, O., $3,750; Otis Elevator Co., New York, $4,950; Marine Engine & Machine Co., New York, $5,085.

GRANITE.—Washington, D. C.—The contract for the granite for constructing light and fog signal tower at Portland Harbor, Me., has been let to the Bodwell Granite Co., Rockland, Me., for $33,679.

MOVING PLATFORM.—Coney Island, N. Y.—The owners of Luna Park at Coney Island are to build a moving platform to be operated between the terminal station of the electric railway and the park.

DREDGING, ETC.—Syracuse, N. Y.—F. J. Schnauber, Cy. Engr., has been working on plans for deepening and straightening Harbor Brook channel. For this work an appropriation of $18,000 is available.

PILE DRIVERS, ETC.—Port Townsend, Wash.—R. W. Trafton, Anacortes, has ecured a contract for constructing three pile drivers and 21 lighters for R. Onffroy, of the Pacific Alaska Transportation Coal Co.

STAMP MILL.—Grangeville, Idaho.—It is stated that a ten-stamp mill will be erected at the Jumbo mine in the Hump district, and that a cyanide plant, to have a capacity of 20 tons daily, will also be installed.

DRAIN.—Harvard, Ill.—Bids are asked until April 25 for digging a drain, about 4½ miles long, 10 ft. deep and 10 ft. wide; approximate cost, $7,500, as is stated in our advertising columns. C. J. Hendricks, attorney.

HYDRAULIC DREDGE PIPE.—Portland, Ore.—Bids will be received at the office of the Port Commissioners, 666 Worcester Block, until April 23, for furnishing 1,000 ft. of shore pipe for the 20-in. hydraulic dredge.

STREET SIGN BOXES.—Brooklyn, N. Y.—Bids are asked by the Brooklyn Borough President until April 22 for furnishing, erecting, maintaining and illuminating for a term of one year 250 street sign boxes and attaching same to electric light poles. Edw. Swanstrom, Pres.

TRAMWAY.—Melrose, Idaho.—The Melrose Tramway Co. has been formed with $15,000 capital to construct a tramway from Melrose to a point on the Clearwater line, six miles distant. G. W. Wood is an incorporator.

MINING PLANT.—Sumpter, Ore.—The South Pole Consolidated Gold Mines Co. expects to reach a point of development on its property soon which will warrant the installation of extensive mining and milling equipment.

CREO-RESINATE PAVING BLOCKS.—New York, N. Y.—A correspondent wants the names and addresses of firms in the West making or dealing in creo-resinate paving blocks. Address "E. H. F.," Engineering News, New York.

MINING MILL.—Sumpter, Ore.—A report of April 10 stated that the Golden Wizard Co., of Sumpter, was getting bids on a mill, which is to be installed some time this summer. The plant is to have a capacity of at least 100 tons.

PIER AND ROPE.—New York, N. Y.—Bids are asked by the Commissioner of Docks, Pier A, Battery Pl., until April 24, for building pier between 51st and 52d Sts., Brooklyn; also for furnishing and delivering manila rope. McDougall Hawkes, Comr.

LOCKS.—Crowley, La.—Bids are asked by the Rice Irrigation & Improvement Association until April 21 for constructing system of locks in the Mermentau River, as is stated in our advertising columns. Maxcy & Anderson, Engrs., Houston, Tex.; Geo. H. Tinker, Secy.

PARK WORK.—San Francisco, Cal.—The Park Commissioners have estimated that they will need for the next fiscal year $40,000 for improving the city squares and $256,000 for construction work. This last item includes $100,000 for the new aquarium and $6,500 for the new lake.

PARKS AND PLAYGROUNDS.—San Francisco, Cal.—A special election will be held at which time a vote will be taken to issue bonds for the following work: Park and presidio extension, $270,000; Telegraph Hill Park, $460,000; Mission Park, $270,000; Twin Peaks Park, $140,000; Children's playground, $560,000.

CYANIDE MILL.—New York, N. Y.—S. S. Moore, Secy. and Treas. Relief Gold Mining Co., 20 Broadway, New York, writes us that plans and details are nearly completed for a 50-ton cyanide mill, which it is believed is the proper treatment for the company's ore. Another test of the ore at the 200-ft. level will be made before deciding. The order will be probably placed for machinery within a month.

SCOWS, ETC.—New York, N. Y.—Bids are asked by the Commissioner Water Supply, Gas & Electricity, 13 Park Row, until April 23, for furnishing one scow East Branch and one scow at West Branch reservoir, and two sets of tools each; also for removing present flash-board irons from East and West Branch reservoirs and for constructing flash-boards for East Branch, Middle Branch and West Branch reservoirs. Robt. Grier Monroe, Comr.

FIRE ALARM SYSTEM.—Washington, D. C.—The following bids were received April 6 for installing fire alarm system at Government Hospital for Insane: Gamewell Fire Alarm & Telephone Co., New York, No. 1, $16,675; No. 2, $18,100; No. 3, $24,900; Mutual District Messenger Co., New York, $8,960; National Automatic Fire Alarm Co., Washington, $25,000; Callum Electric Signal Co., $26,601.20, entire plant complete, or $19,743.75 with an additional charge each year for rental.

SUBWAYS.—Brooklyn, N. Y.—Borough President Swanstrom has suggested to the Rapid Transit Commissioners that a subway be constructed from the Brooklyn entrance to Bridge No. 3, at DeKalb Ave. and Fulton St., to connect with the proposed terminal of tunnel No. 1, at the junction of Flatbush and Atlantic Aves., and thence to branch out in two directions, one through Flatbush Ave. to a point near the intersection of Malbone St., to provide a connection with the Brighton Beach extension of the Kings County R. R.; the other under the whole length of Fourth Ave., to a point on the Shore Road, north of the United States Government reservation, and thence to pass under the Narrows to the county of Richmond. Mr. Swanstrom also suggested the construction of a subway from the Battery, Manhattan, to the foot of Hamilton Ave., to be continued under Hamilton Ave. and connect with the Fourth Ave. tunnel.

U. S. POSSESSIONS AND CUBA.

COALING PLANT.—Alaska.—Bids are wanted by R. B. Bradford, Ch. Bureau Equipment, Navy Dept., Washington, D. C., until June 1 for extension of coaling plant at Japonski Island, Sitka, Alaska. Plans, etc., at U. S. N. station, Bremerton, Wash.

HYDRAULIC DREDGING.—Santiago De Cuba.—Ricard S. Porro, Contracting Engr., writes us that he has a Government concession for dredging and land reclamation in this harbor, and would like to get prices from contracting firms of the cost per cubic yard of hydraulic dredging. The amount of dredging will be about 1,500,000 cu. yds. of mud, to be discharged at a distance of not more than 1,500 yds., and taken from a depth of 25 ft. Land reclaimed 5 ft. above the level of mean tide. A blue print of the harbor showing the work to be done may be seen at the office of the Engineering News Pub. Co., 220 Broadway, New York.

LIGHT AND POWER FRANCHISE.—Santiago de Cuba.—Eduardo J. Chibas, Consult. and Contract. Engr., Apartado 110, Santiago de Cuba, has obtained a franchise from the Government of Cuba for an electric light and power plant and five miles of electric tramway in this city.

DRY-DOCK.—Manila, P. I.—The contract for building the new floating steel dry-dock for the U. S. Navy at Cavite has been awarded to the Maryland Steel Co. at $1,124,000. The dock will be 500 ft. long, weighing about 10,000 tons. It will be delivered to the Navy Department at Baltimore, Md., and will be towed via the Suez Canal to Manila.

FOREIGN CONTRACTS—EXPORT NEWS.

ELECTRIC FANS.—Egypt.—P. Franko, Alexandria, wants information regarding filters for household use, leather belting and electric fans as early as possible.

PUMPING MACHINERY.—Calcutta, India.—Bids are wanted by the Corporation of Calcutta until April 21 for the supply and erection of sewage pumping plant at Ballygunge Pumping Station. Fred. Gainsford, Secy.

ELECTRIC POWER SUPPLY.—Egypt.—Bids will be received by the Egyptian Ministry of Public Works, Cairo, until May 12, for installing a system of electric power supply for Government and private use in Ghiza and Ghezira.

TELEPHONE.—Durban, S. Africa.—The Durban Corporation will issue bonds to amount of about $500,000 for the purchase of the Natal Telephone Co.'s property at $111,374, and for the acquisition of new equipment with the balance.

ELECTRIC LIGHT AND POWER.—Ipswich, Eng.—Bids are asked until April 27 for furnishing piping, pumps, surface condensing plant, feed-water filters and tanks to the borough of Ipswich for use in connection with its electric light and power supply. Will Bantoft, Town Clk.

WATER-WORKS.—Guayaquil, Ecuador.—R. B. Jones, Vice Consul-Gen., reports that L. Garcia, of this city, has sailed for New York to make arrangements for constructing a system of sewers, fire mains and pumping station for Guayaquil. Señor Garcia will remain in New York about two weeks and may be seen through W. R. Grace & Co., 1 Hanover Square, or G. Amsinck & Co., 6 Hanover Square. He will have complete data for the necessary construction.

ELECTRIC RAILWAY.—Peru.—Reports state that A. W. McLimont, who recently acted as engineer to an electric railway project in Monterey, Mex., has sailed for Peru on the "Yucatan," where he will superintend the construction of an electric traction system which is to be constructed between Lima and Chorillos, a watering place located nine miles distant. The General Electric Co., New York, is said to have secured the contract for the electrical apparatus.

ELECTRIC SUPPLY.—Johannesburg, S. Africa.—The corporation of Johannesburg has adopted the report relating to the reconstruction of the electric supply system of that community. The plans are by Mordey & Dawbarn, Consult. Engrs., Victoria St., Westminster, S. W., London, Eng., and represents an outlay of some $9,450,000, which is divided up as follows: Electric light and power, $2,425,000; electric tramways, $1,948,570; electric tramways extension, $1,189,480; gas conversion, $4,365; generating station site, $85,000; consumers' alterations, $38,500; provision for ocntingencies, $754,685. The entire system will be reorganized and be operated thereafter as a unit.

MEXICO.—MISCELLANEOUS WORKS.

TEPIC.—The construction of several water-power plants in this town is being discussed by various parties, and Ignacio C. Curiel, Engr., is now engaged in drawing plans, etc., for the installations.

NUEVO LEON.—The Mining Co. of Nuevo Leon, organized for the development of the mineral district south of Montemoreles, is soon to let contracts for two large reducing and concentrating plants.

MONTEREY.—Local papers state that D. L. Baumgarten is Gen. Mgr. of the company which will in the near future erect a plant for manufacture of Sunlight acetylene gas generators. Francisco Belden is Pres. of the company.

CHIHUAHUA.—The Iron & Steel Corporation of Mexico, which was recently organized under the laws of New Jersey, for the purpose of taking over the plant of the Compania Industrial Mexicana in this city, propose making extensive improvements and to enlarge the industry. Enrique Creel, of this city, is Pres.

TEHUACAN.—The municipal authorities have granted a concession to Inocente Sanchez and Ramon de la Fuente for the establishment of an electric light plant here.

CITY OF MEXICO.—An appropriation of $32,697 has been made by the city council for boring six artesian wells and laying pipes to convey the water to the government agricultural college.

CONTRACT PRICES.

CAST-IRON PIPE AND SPECIALS.—Melrose, Mass.—The following bids were received by the public works department on March 21, 1903, for suppling cast-iron pipe and specials; (1) bid U. S. Cast-Iron Pipe & Foundry Co., Philadelphia (awarded contract); (2) F. A. Houdlette & Son, 139 Milk St., Boston; (3) Chas. Millar & Son Co., Utica, N. Y.; (4) M. J. Drummond & Co., 192 Broadway, New York; (5) Camden Iron Works, Camden, N. J.; the quantities call for the long ton:

		1.	2.	3.	4.	5.
4-in. pipe	12 tons	$34.95	$35.85	$37.52	$37.20	$38.90
6-in. "	93 "	34.95	35.85	36.40	36.10	37.90
8-in. "	47 "	34.95	35.85	36.40	35.50	37.90
10-in. "	43 "	34.95	35.85	35.28	35.00	37.70
12-in. "	269 "	34.95	34.85	35.28	35.00	37.70
Reducers .	1 "	60.00	61.60	61.60	61.60	78.00
Specials ..	5 "	83.00	84.00	61.60	61.60	88.00
Total		$16,671	$16,825	$16,901	$16,740	$18,030

WATER GATES.—Melrose, Mass.—The public water department awarded the contract on March 21, 1903, for supplying 25 extra heavy high pressure bell end water gates and 12 6-in. hydrants to M. J. Drummond & Co., 192 Broadway, New York, at the following figures: Gates, 35 6-in., $10 each; 4 10-in., $22.40; 15 12-in., $33; total, $945; hydrants, $31.55 each. The other bidders were: Swett & Doyle, 238 Franklin St., Boston; Rudloe Valve Mfg. Co., 150 High St., Boston; Norwood Engineering Co., Florence, Mass.; Darling Pump & Mfg. Co., Ltd., Williamsport, Pa.; Coffin Valve Co., Neponsett, Mass., and the Rensselaer Mfg. Co., Troy, N. Y.

CAST-IRON PIPE AND CASTINGS.—Newburyport, Mass.—The water commissioners on March 30 awarded a contract to the Camden Iron Co., Camden, N. J., for supplying 125 tons of 12-in. c.-i. pipe at $30.65, and special castings at $55 per ton, f. o. b. Newburyport.

Information concerning contracts to be let or of supplies to be furnished, and corrections of errors and omissions in published items, are invited.

FILTRATION PLANT.—Washington, D. C.—The following bids were received by Lieut.-Col. A. M. Miller, U. S. Engrs., on March 31 for filter materials and work in connection with the construction of the filtration plant in Washington; advertised in Engineering News; irregular bids, T. A. Gillespie Co., New York, steel pipe system, $53,750, excluding excavation and concrete; (1) 42,300 cu. yds. filter gravel, (2) 140,200 cu. yds. filter sand; L. E. Smoot, Washington, (1) $2.75 per cu. yd.; (2) $2.65; Jas. W. Bain, Norfolk, Va., (1 and 2) $2.74; Wm. H. Wile, 112 South Fourth St.; Philadelphia, Pa., (1) $3.09, (2) $3.09; Chas. G. Smith & Son, Washington, (1) $3.47; other bids were as follows (where totals are marked thus * bid is for all work or none):

DREDGING.—Montgomery, Ala.—Capt. R. R. Raymond, U. S. Engrs., received bids from Rittenhouse Moore, Mobile, Ala., on April 4, 1903, for dredging at Appalachicola Bay and Carrabelle Harbor, at 30 cts. per cu. yd., and recommended the acceptance of the same.

LAYING WATER PIPE, ETC.—Lexington, Mass.—Louis F. Hawes, Engr., 101 Tremont St., Boston, writes us that 15 bids were received March 25, 1903, for laying cast-iron water pipe, setting hydrants, gate valves, etc., (letting advertised in Engineering News). The contract was awarded to Edward B. Roberts, Box 644 Swampscott, Mass., the lowest bidder, whose figures are as follows: For laying 9,000 lin. ft. of cast-iron pipe, 35 cts. a lin. ft.; 5 ft. of 10-in., 30 cts.; 6 ft. of 8-in., 26 cts.; 30 ft., 6-in. 25 cts.; setting 5 12-in. gates and boxes, $2; 2 8-in., $1.50; 21 6-in., $1.25; setting 18 hydrants, $1 each; 50 cu. yds. of rock excavation, $4 per yd.; 25 cu. yds. earth, 25 cts; total, $3,424. The other bidders and their totals were: C. N. Taylor, Wellesley, $3,514; Osgood Construction Co., 115 Main St., Nashua, N. H., $3,635; W. H. Ellis, 17 Milk St., Boston, $3,721; M. Russo, 240 North St., Boston, $3,757; Bruno & Milano, 293 North St., $3,887; Egles, Buntin Co., 120 Milk St., $4,166; H. A. Hanscom Co., 53 State St., Boston, $4,779; Daniel A. Dorey, 17 Howe St., Somerville, $5,016; C. E. Trumbull Co., 1121 Tremont Bldg., Boston, $5,259; Wm. J. McCarty, 27 Bonair St., Somerville, $5,489; Coleman Bros., Union St., Everett, $5,504; John A. Rooney, 95 Milk St., Boston, $5,331.

BIDS RECEIVED AT WASHINGTON, D. C., MARCH 31, 1903, FOR CONSTRUCTING A FILTRATION PLANT.

Quantities and items.		Cowardin, Bradley, Clay & Co., Richmond, Va.	The Brennan Const'n Co., Washington, D. C.	Talty & Allen, Washington, D. C.	Mosier & Summers, Buffalo, N. Y.	D. J. McNichol, Philadelphia, Pa.	The Cranford P'v'g Co., Washington, D. C.	N. Y. Continental Jewell Filtration Co., New York.	Frank B. Jones, Philadelphia, Pa.	McArthur Bros. Co., New York.	P. J. Carlin & Co., Brooklyn, N. Y.
Excavation	880,000 cu. yds.	$0.30	$0.35	$0.35	$0.36	$0.32	$0.40	$0.33	$405,328	$0.33	$0.40
Embankment under filters	65,400 " "	.30	.40	.40	.40	.48	.30	.40	23,715	.40	.50
Other embankment	46,700 " "	.30	.34	.35	.30	.48	.30	.50	16,933	.40	.40
Filling over filters	123,400 " "	.30	.40	.40	.35	.50	.35	.30	44,600	.50	.40
Puddle	2,000 " "	1.00	3.60	4.50	3.50	4.00	3.50	3.50	4,645	1.50	5.00
Seeding	31 acres...	75.00	100.00	100.00	100.00	100.00	90.00	100.00	2,217	100.00	100.00
Sodding	9,700 sq. yds.	.25	.40	.40	.35	.55	.50	.50	3,517	.39	.40
Concrete in floors	39,300 cu. yds.	4.50	5.00	....	5.00	5.50	....	5.00	168,303	4.95	5.00
" " walls	26,300 " "	5.10	5.40	....	6.25	6.25	....	5.25	164,181	5.05	6.00
" " piers	8,200 " "	6.00	6.40	....	6.25	7.00	....	6.00	67,262	6.00	7.00
" " vaulting	37,400 " "	6.50	7.70	....	6.75	6.50	....	6.00	251,800	6.50	8.00
Granolithic pavement	35,000 sq. yds.	.90	.89	....	1.10	1.27	....	.90	46,991	.80	.90
Placing materials in masonry	29 filters..	200.00	250.00	....	375.00	73.00	....	225.00	1,620	230.00	60.00
Drainage of roofs	29 filters..	266.00	450.00	....	330.00	573.00	....	550.00	16,285	156.00	500.00
Steel pipe system, complete		....	72,800.00	....	82,000.00	98,000.00	....	86,500.00	58,724	54,835.00	55,000.00
Cast-iron pipe and specials		....	75,000.00	....	68,000.00	89,500.00	....	80,000.00	46,226	58,598.00	45,000.00
Sand washer pipe		....	24,000.00	....	25,000.00	5,000.00	....	35,000.00	9,774	19,840.00	25,000.00
Pressure pipe system		....	1,200.00	....	1,800.00	1,000.00	....	1,150.00	15,654	1,300.00	2,000.00
Exterior drainage system and manholes		....	25,000.00	....	28,500.00	27,700.00	....	25,000.00	17,614	23,814.00	16,000.00
Central underdrains in filters	7,900 lin. ft..	....	1.65	....	2.00	1.65	....	1.80	.....	1.25	1.26
Interior drainage system	29 filters..	....	500.00	....	475.00	520.00	....	470.00	.....	581.00	206.83
Filter gravel	42,300 cu. yds.	....	2.75	....	2.35	2.38	....	2.50	118,973	2.87	3.00
Filter sand	140,200 " "	....	2.75	....	2.85	2.53	....	2.50	463,025	3.57	3.00
Total		*$989,694	$1,871,418	$415,845	*$1,871,025	*$1,862,447	$443,400	*$1,765,780	*$1,947,387	*$1,872,693	*$1,934,812

PAVING.

Beaumont, Texas.

Sealed proposals, addressed to W. A. Ives, City Secretary of the City of Beaumont, Tex., will be received up to 9 o'clock Tuesday, May 5, 1903, for the construction of brick or asphalt paving and brick, stone or cement curbing on Calder Ave., between Pearl and Gulf Sts.; on Tevis St. between Travis and Cypress Sts.; on Orleans St., between Forsythe and Austin Sts.; on Park St., between Austin and Simpson Sts.; on College St., between Main and Railroad Ave.; on Bowie St., between Main and Pearl Sts.; on Main St., from end of brick pavement in that street to College St.; on Magnolia Ave., from Calder to Long Ave.; on Keith St., from Calder Ave. to North St.; on Sabine St., from Crockett to Bowie St., as per plans and specifications on file in the office of the City Engineer. All proposals must be accompanied by a certified check, as stated below, on some National Bank in the City of Beaumont, made payable to T. H. Langham, Mayor, without conditions, same to be forfeited as liquidated damages in case of failure of successful bidder to enter into contract and bond as required by the City Council.

Name of street.	Approximate— No. of sq. yds. pavement.	Lin. ft. of curbing.	Amount certified check to accompany bid.
Calder	20,560	7,000	$1,000
Tevis	1,850	400	200
Orleans	11,000	3,740	600
Austin	3,500	1,360	250
Park	6,455	2,700	500
College	15,518	5,300	750
Bowie	1,745	500	200
Main	7,070	2,380	500
Magnolia	8,000	2,770	600
Sabine	1,745	680	200
Keith	3,226	1,372	250
	80,669	28,202	...

The successful bidder will be required to furnish a bond in the sum of not less than twenty-five (25) per cent. of the total amount of contract price with some satisfactory surety company as surety.

The city reserves the right to reject any and all bids.

Plans and specifications are on file and may be seen at the office of the City Engineer, Beaumont, Tex. Payments approximately one-half cash and one-half paving bonds of City of Beaumont, Tex. 16-3t

THOS. H. LANGHAM, Mayor.

PROPOSALS TO CLEAN STREETS, AVENUES AND ALLEYS IN THE DISTRICT OF COLUMBIA, will be received at the office of the Commissioners, 464 Louisiana Ave., Washington, D.C., up to noon of May 1, 1903. The work consists of (1) Cleaning public alleys, (2) Cleaning unimproved streets, (3) Cleaning by machine, sweeping or flushing improved streets and avenues. Separate proposals will be received for each class of work. Specifications, forms of proposals, and all necessary information furnished upon application to the Superintendent of Street Cleaning Department. H. B. F. MACFARLAND, H. L. WEST, JOHN BIDDLE, Commissioners of the District of Columbia. 14-4t

ASPHALT PAVING.

NOTICE TO CONTRACTORS.

Mayor's Office,
Alexandria, La., April 8, 1903.

Pursuant to an ordinance passed by the Mayor and Board of Aldermen of the City of Alexandria, La., at a regular meeting held on the 7th day of April, 1903, authorizing and empowering me to advertise for bids for a period of thirty days for the paving with asphalt of Third St., from Monroe to Bellier, approximately 19,000 sq. yds., in accordance with the terms and provisions of Act No. 187, of the legislative Acts of 1898, said work to be done under the direction and supervision of the City Engineer, and in accordance with plans and specifications on file in said Engineer's office.

Notice is hereby given to contractors and all others that bids for said work will be received at the City Hall, Alexandria, La., up to 4 p. m. of Tuesday the 12th day of May, 1903. Each bid must be accompanied by a certified check for the sum of Two Hundred Dollars as a guarantee that the bidder will enter into a written contract with the said city within ten days from the date of award, and furnish satisfactory security in the sum of 20% of the contract price, for the faithful performance of his work. The work shall be begun within ten days after the signing of the contract and completed within four months after that date. Separate bids will be required on each street.

The right of the City to reject any and all bids is reserved.

Witness my hand and seal officially at Alexandria, La., on the day and date first above written.

F. M. WELCH,
16-2t Mayor of the City of Alexandria, La.

IRRIGATION LOCKS.

Crowley, La.

Bids will be received at the office of The Rice Irrigation & Improvement Association, Crowley, La., until 1 o'clock p. m., April 21, 1903, and then opened, for the construction of a system of Locks in the Mermentau River, Parish of Cameron, La. Full particulars can be had on application to the undersigned, or to Maxcy & Anderson, Civil Engineers, Houston, Tex. The right is reserved to reject any and all bids. GEO. H. TINKER,
16-1t Secretary, Crowley, Louisiana.

U. S. ENGINEER OFFICE, Army Building, New York, N. Y., March 23, 1903.—Sealed proposals for Dredging in Passaic River, N. J., will be received here until 12 m., April 22, 1903, and then publicly opened. Information furnished on application. C. W. RAYMOND, Lieut.-Col., Engrs. 13-4t

BRICK AND PIPE SEWER.

Connersville, Ind., April 11, 1903.

Sealed proposals will be received by the Common Council of the City of Connersville, Ind., until 7:30 o'clock p. m. on the 1st day of May, 1903, for the construction of a combined Storm and Sanitary Sewer System, according to Ordinance No. 370 therefor, and the plans, specifications and profiles for said improvement, on file at office of the City Clerk. Said proposal must be accompanied with a certified check for Eight Thousand ($8,000) dollars made payable to the City of Connersville, Ind.

The work includes the construction of about 7½ miles of Brick and Pipe Sewers, ranging in size from six (6) inches to four (4) feet in diameter. Also with necessary outlet, inlets, catchbasins, manholes, etc.

All bidders are required to read specifications, examine plans, profiles, and the location of the proposed work before submitting their bids. All proposals to be marked: "Proposals for Constructing Sewers." The right is reserved to reject any and all bids.

By order of Council.

JACOB S. CLOUDS, City Clerk.
KARL L. HANSON, City Engr. 16-2t

DRAIN.

SEALED BIDS will be received for the digging of a Drain about 4½ miles long, about 10 ft. deep and 12 ft. wide, on the 25th day of April, 1903, at the law office of C. J. Hendricks, at Harvard, Ill. Approximate estimate, $7,500. Specifications furnished on request. C. J. HENDRICKS, Attorney. 16-1t

MACADAMIZING.

Sealed bids or prosposals will be received by a Committee of the Board of Chosen Freeholders of the County of Morris, in the State of New Jersey, on Monday the 4th day of May, 1903, at 10 o'clock in the forenoon, at the Freeholders Room in Morristown, N.J., for Macadamizing a section of the Newark and Pompton turnpike, in Pequannoc Township, extending from the intersection of said turnpike with the county road leading from the Pequannoc River, northerly through the village of Pequannoc, thence northeasterly along said Newark and Pompton turnpike, a distance of three thousand nine hundred and sixty feet more or less and there ending.

Maps, specifications and profiles may be seen at the Freeholders room in Morristown, N. J.

G. A. BECKER, Director,
Board of Chosen Freeholders,
16-3t Morristown, N. J.

U. S. ENGINEER OFFICE, Winthrop Bldg., Boston, Mass., March 25, 1903.—Sealed proposals for furnishing Portland Cement, Sand and Broken Stone, will be received here until 12 m., April 25, 1903, and then publicly opened. Information furnished on application. HARRY TAYLOR, Capt., Engrs. 13-4t

U. S. ENGINEER OFFICE, Duluth, Minn., Mar. 25, 1903.—Sealed proposals for furnishing 7,000 cu. yds. Broken Stone and 4,000 cu. yds. Sand for concrete superstructure to breakwater, Marquette, Mich., will be received here until noon, April 24, 1903, and then publicly opened. Information on application. D. D. GAILLARD, Capt., Engrs. 13-4t

MACADAM PAVEMENT.

Watertown, N.Y., Apr. 13, 1903.

Sealed proposals will be received by the Board of Public Works, at the office of the City Engineer until 2 o'clock p. m., May 1st, 1903, for the construction of about 19,200 sq. yds. of Bituminous Macadam Waterproof Pavement with traprock surface; also for furnishing and laying 1,500 ft. of new Limestone Curbing, and for the relaying of about 6,700 ft. of Old Curbing; also for building 25 new Catchbasin Wells with cast-iron tops and sanitary traps complete; also such other work as may be necessary to complete the pavement on State St., from the header-line at the Baptist Church to the easterly side-line of Pleasant St.

A certified check in the sum of one thousand ($1,000) dollars made payable to the order of the City Treasurer will be required with each bid.

Bidders must furnish their own specifications showing the method to be pursued in the construction of their pavement, which if approved and accepted by the Board of Public Works, will be embodied in the City's standard specifications and be considered as part of the same.

Plans and specifications may be seen at the office of the City Engineer on and after April 15th, 1903.

The Board reserves the right to reject any and all bids.

C. O. McCOMB,
16-2t City Engineer.

U. S. ENGINEER OFFICE, Grand Rapids, Mich., April 6, 1903.—Sealed proposals for repair of Piers at St. Joseph and Black Lake, Mich., will be received here until 3 p. m., May 6, 1903, and then publicly opened. Information furnished on application. J. G. WARREN, Major, Engrs. 15-4t

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HARBOR IMPROVEMENTS.

The Government of Jamaica is prepared to receive tenders for the Improvement of the Harbor of Falmouth, in the Island of Jamaica, in the manner hereinafter described.

The work to be executed under the proposed contract consists of the excavation and removal of

(1) The submerged rock in the entrance to the said harbor, known as the "Triangular Rock," to a depth of five (5) fathoms below low water of Spring Tides.

(2) Two spurs of the main reef on the west side of the said entrance, back to a line fifty (50) feet distant from and parallel to a line running S. 35° W. from the center of the said Triangle Rock, and to a depth of five (5) fathoms below low water of Spring Tides.

(3) The submerged rock on the east side of the ship channel into the harbor, known as the "Hopewell Rock," to a depth of five (5) fathoms below low water of Spring Tides.

(4) The submerged rocks in the side harbor, known as the "Inner Shoal" and the "Middle Shoal," respectively, to a depth of five (5) fathoms below low water of Spring Tides.

(5) The submerged rock in the harbor known as the "Harbor Rock," to a depth of four (4) fathoms below low water of Spring Tides.

The following will be the conditions of the proposed contract:

1. The work shall be so executed and completed that after its completion there shall be at all points inside the five (5) fathom line enclosing the harbor its ship channel and entrance, a depth of not less than (5) five fathoms below low water of the Spring Tides.
2. The contractor shall not deposit or allow to be deposited any solid matter in any part of the harbor where the depth of water is now less than five (5) fathoms at low water of Spring Tides, and shall remove at his own expense such matter, if any, as shall be so deposited through any act of his or of any of his servants or agents.
3. Payment will be made to the contractor at such times and in such manner as shall be agreed upon before signing the contract.
4. Plant, tools and materials to be used exclusively for the purposes of this contract will, if consigned to the Director of Public Works and kept under the supervision and in accordance with the regulations of the Revenue Department, be admitted free of import duty.
5. The whole of the work included in the contract shall be completed within six months after the date of the contract, and as time is of the essence of the contract, there shall be a deduction made from the contract sum of £5 for every day in excess of the contract time, as liquidated damages and not in the nature of a penalty.
6. The contractor and two approved sureties will be required to enter into a joint and several bond to His Majesty the King for a sum of £1,000 for the due performance of the contract.

All the information on the subject of the harbor and the work to be done possessed by the Government of Jamaica may be obtained at the Office of the Director of Public Works in Kingston, Jamaica, but the Government will not guarantee the accuracy of any such information, nor be held responsible should the contractor suffer loss or injury through incorrect or insufficient information.

The rock to be excavated is believed to be chiefly, if not entirely, of coral formation, and the cubic contents of the excavation to be done has been estimated as follows, that is to say:

Triangle rock	300	cu. yds.
Spur No. 1.....	550	" "
Spur No. 2.....	400	" "
Hopewell Rock	1,500	" "
Middle Shoal	7,500	" "
Inner Shoal	5,700	" "
Harbor Rock	500	" "
Total.....	16,450	" "

Tenders must be delivered at the office of the Director of Public Works, Kingston, Jamaica, West Indies, in sealed envelopes, addressed to him and marked outside "Tender for Falmouth Harbor Improvement," on or before the 20th day of May, 1903. 12-6t

OFFICE CONSTRUCTING QUARTERMASTER, Cheyenne, Wyo., April 2, 1903.—Sealed proposals, in triplicate, will be received at this office until 2 o'clock p.m. (Mountain time), May 2, 1903, and then opened, for furnishing all material, machinery, tools and labor necessary for sinking at least two (2) and not exceeding six (6) tubular deep wells at Fort D. A. Russell, Wyoming. Specifications, instructions to bidders, and blank forms of proposal furnished on application to this office; also to the office of the Chief Quartermaster, Chicago, Omaha, St. Paul, and Denver. United States reserves the right to reject any or all bids or any part thereof. Envelopes containing bids to be endorsed "Proposals for Sinking Wells at Fort D. A. Russell, Wyo.," and addressed to Capt. W. S. SCOTT, Constructing Quartermaster, Cheyenne, Wyo. 14-4t

ASPHALT PAVING.

Office Board Street, Sewer and Drain Commissioners,
Norfolk Va.

Sealed proposals will be received at this office on May 14, 1903, at 12 o'clock noon, and immediately thereafter opened, for laying about twenty-two (2,200) hundred sq. yds. of Asphalt Paving on Clay St., in this City.

Forms of proposals, instructions to bidders and specifications for the work may be obtained on application to W. T. Brooke, City Engineer, or B. Gray Tunstall, Chairman of the Board. Each bid must be accompanied by a certified check, payable to H. S. Herman, City Treasurer, in the sum of three hundred ($300) dollars, as a guarantee of the good faith of the bidder, which check shall be forfeited as liquidated damages to the City of Norfolk, Va., in the event of the failure or refusal of the successful bidder to enter into a contract within ten days after the same is awarded him.

A satisfactory bond in the sum of eighteen hundred dollars will be required of the contractor.

The right to reject any or all bids is specially reserved.

B. GRAY TUNSTALL,
Chairman Boards of Street, Sewer and Drain Commissioners.
15-2t

BEACH DRIVE, BULKHEAD AND BOARDWALK.

Cape May, N. J., Mar. 24, 1903.

Sealed proposals will be received by the City Council of the City of Cape May, N. J., in council assembled, on Tuesday, April 28, 1903, at 8 o'clock p. m., for the construction of a Beach Drive, a Bulkhead and a Boardwalk, approximately 12,500 ft. in length.

Each bid must be accompanied by a certified check of $1,000, payable to the City Treasurer of the City of Cape May, as a guarantee that the contract will be entered into if the bid is accepted. A surety bond of $25,000 will be required of the contractor.

Plans and specifications can be had upon application to Jno. W. Thompson, Recorder of the City of Cape May, N. J., at a charge of $10, which said sum will be refunded upon the return of the plans and specifications within thirty days after the letting. Proposals must be enclosed in sealed envelopes, and each must have plainly written upon it "Proposals," and a statement also of the portion of the work for which it is a proposal.

For further information, apply to Jno. W. Thompson, Recorder of the City of Cape May, N. J.

JOHN HALPIN,
President of Council.
Attest:
JNO. W. THOMPSON, Recorder. 13-5t

TWO DRAWBRIDGES.

NEAR ATLANTIC CITY.

Magnolia, N. J., April 1, 1903.

Sealed proposals are invited to build, for the County of Atlantic, duplicate Steel Drawbridges on the new highway leading from Pleasantville to Atlantic City, in Atlantic County, N. J. Bids will be received at the regular monthly meeting of the Board of Freeholders at the Memorial Hall, in Atlantic City, on Tuesday, May 12, 1903, at 11 a. m., at which time the bids will be opened and publicly read.

The Board reserves the right to reject any or all bids. Each bid must be accompanied with a certified check in the sum of one thousand dollars. Plans and specifications can be seen at the County Clerk's office, in May's Landing, N. J., or will be mailed to any address on receipt of one ($1) dollar, sent to John C. Anderson, Clerk of the Board at May's Landing, N. J.

FRANK ENDERLIN,
Chairman Bridge Committee,
Cologne, N. J.
J. J. ALBERTSON, Atlantic Co. Engr. 15-2t

DRAINAGE WORK.

Tomah, Wis.

Sealed proposals will be received by the Lemonweir River Drainage District of Monroe and Juneau counties, Wisconsin, up to 8 a.m. of the 15th day of May, 1903, for the digging of the mains and laterals of said district. Each bid must be accompanied by a certified check for 5% of bid. The right to reject any and all bids is expressly reserved. Plans may be seen and specifications obtained by application to WM. S. FRYER,
14-3t Tomah, Wis.

NOTICE TO TUNNEL CONTRACTORS.

Sealed proposals, marked "Bid for Tail-Race Tunnel," will be received by the undersigned until noon, May 11th, 1903, for the construction of a Tail-Race Tunnel for the Toronto & Niagara Power Co., of Toronto, Ontario. Plans and specifications for this work are on file and can be seen after March 30th, 1903, at the Company's offices, at Home Life Building, Toronto, Ontario, and Niagara Falls, Ontario, or office of F. S. Pearson, No. 29 Broadway, New York, Room 220. The right is reserved to reject any or all proposals.

FREDERIC NICHOLLS,
Vice-President and General Manager,
14-6t Home Life Bldg., Toronto, Ontario.

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., April 8th, 1903.—Sealed proposals will be received at this office until 3 o'clock p. m., on the 11th day of May, 1903, and then opened, for the approaches at the U. S. Post Office and Court House at Elmira, N. Y., in accordance with drawing and specification, copies of which may be had at this office or the office of the Superintendent of Construction of the building at Elmira, N. Y., at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 16-2t

U. S. ENGINEER OFFICE, Winthrop Bldg., Boston, Mass., March 20, 1903.—Sealed proposals for Dredging in Beverly and Manchester harbors, Mass., will be received here until 12 m., April 20, 1903, and then publicly opened. Information furnished on application. HARRY TAYLOR, Capt., Engrs. 13-4t

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., April 11, 1903.—Sealed proposals will be received at this office until 3 o'clock p. m., on the 14th day of May, 1903, and then opened, for the construction (except heating apparatus and passenger elevator) of the extension of the U. S. Custom House and Post Office at Hartford, Conn., in accordance with drawings and specifications, copies of which may be had at this office, or at the office of the Custodian at Hartford, Connecticut, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 16-2t

U. S. ENGINEER OFFICE, New London, Conn., Apr. 14, 1903.—Sealed proposals, in triplicate, for Dredging in New London Harbor, New London, Conn., will be received here until 12 noon, May 15, 1903, and then publicly opened. Information on application. CHAS. F. POWELL, Maj., Engrs. 16-4t

U. S. ENGINEER OFFICE, Army Building, New York, April 15, 1903.—Sealed proposals for dredging in Hudson River and Saugerties Harbor, N. Y., will be received here until 12 m. May 15, 1903, and then publicly opened. Information on application. AMOS STICKNEY, Col., Engrs. 16-4t

TREASURY DEPARTMENT.—Office of the Director of the Mint, Washington, D. C., March 25, 1903.—Sealed proposals will be received at this office until 2 o'clock p. m., on the 28th day of April, 1903, and then opened, for the installation of an Electric Light and Power Plant in the U. S. Mint building, Denver, Colo. Copies of the specification may be obtained at this office, at the discretion of the Director of the Mint. R. E. PRESTON, Acting Director of the Mint. 14-4t

OFFICE CONSTRUCTING QUARTERMASTER, Cheyenne, Wyo., April 8, 1903.—Sealed proposals, in triplicate, will be received at this office until 2 o'clock p. m., Mountain time, May 8, 1903, and then opened for furnishing all material and labor necessary to extend the present Water System at Fort D. A. Russell, Wyo., consisting of about 9,100 ft. of 6-in. and 1,450 ft. of 4-in. cast-iron pipe, including the necessary valves and fire hydrants. Bidders must state in their bids the time in which they will complete the work as time will form an important factor in making the award. Full information, blank forms, plans and specifications furnished on application to this office; also to the office of Depot Quartermaster, Omaha, St. Paul, Chicago, New York, Philadelphia, Jeffersonville, Ind., St. Louis, Fort Leavenworth, Kan., and Denver. United States reserves the right to accept or reject any or all bids or any part thereof. Envelopes containing bids to be endorsed "Proposals for Water System at Fort D. A. Russell, Wyo.," and addressed to Capt. W. S. SCOTT, Constructing Quartermaster, Cheyenne, Wyo. 15-4t

U. S. ENGINEER OFFICE.—Washington Barracks, D. C., April 1, 1903.—Sealed proposals for Portland and natural cement, sand, gravel, construction of roads and sidewalks, including grading and retaining walls, sewers, drains and water supply system, at Washington Barracks, D. C., will be received at this office until noon, April 30, 1903, and then publicly opened. Information furnished on application. JOHN STEPHEN SEWELL, Captain Engineers, Acting Q. M., U. S. A. 14-4t

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OFFICE CONSTRUCTING QUARTERMASTER, Cheyenne, Wyo., March 31, 1903.—Sealed proposals, in triplicate, will be received at this office until 2 o'clock p. m. (Mountain time), May 1st, 1903, and then opened, for furnishing all material and labor necessary for the construction of about 1,850 ft. of 6-in. Sewer at Fort D. A. Russell, Wyo. Full information, blank forms, plans and specifications furnished on application to this office; also to the office of the Chief Quartermaster, Chicago, St. Paul, Omaha, Ft. Riley, Kan., and Denver. United States reserves the right to accept or reject any or all bids or any part thereof. Envelopes containing bids to be endorsed "Proposal for Sewer System at Fort D. A. Russell, Wyo.," and addressed to Capt. W. S. SCOTT, Constructing Quartermaster, Cheyenne, Wyo. 14-4t

U. S. ENGINEER OFFICE, Army Building, New York, March 24, 1903.—Sealed proposals for furnishing material and building a Riprap Bulkhead southwest of Governor's Island, New York Harbor, will be received at this office until 12 m. April 23, 1903, and then publicly opened. Information on application. W. A. MARSHALL, Major, Engrs. 13-4t

U. S. ENGINEER OFFICE, Winthrop Bldg., Boston, Mass., April 1, 1903.—Sealed proposals for Dredging in Narrows of Lake Champlain, Vt., and Plattsburg Harbor, N. Y., will be received here until 12 m., May 1, 1903 and then publicly opened. Information furnished on application. HARRY TAYLOR, Captain, Engrs. 14-4t

OFFICE OF THE CONSTRUCTING QUARTERMASTER, 621 Dooly Building, Salt Lake City, Utah, April 15, 1903.—Sealed proposals, in triplicate, will be received here until 11 a. m., standard time, May 4th, 1903; and then opened for the Plumbing, Heating, Gas Piping and Electric Wiring of two double Cavalry Barracks, to be erected at Fort Douglas, Utah. Information and blank forms of proposals furnished on application to this office. Plans and specifications may be seen here. United States reserves the right to accept or reject any or all proposals, or any part thereof. Envelopes containing proposals to be marked, "Proposals for Public Buildings," and addressed to Capt. SAM'L V. HAM, Quartermaster. 16-3t

OFFICE OF THE ENGINEER IN CHARGE IMPROVEMENT OF THE PORT.—Manila, P. I., February 15, 1903.—Sealed proposals for constructing an additional Breakwater at Manila, P. I., will be received at this office until 11 o'clock a. m., June 15, 1903, and then publicly opened. Work to be done includes about 450,000 tons of 2,240 lbs. each, of rock filling, in water of approximately 30 ft. depth. Bids must be accompanied by a bond of $50,000 U. S. currency. One contract will be made for the whole work. Contractor's bond will be for 10% of the amount bid. The right is reserved to reject any or all bids. For specifications and blank forms, apply to this office, the U. S. Engineer Office, Room "H," Army Bldg., New York City, N. Y.; the U. S. Engineer Office, 1637 Indiana Ave., Chicago, Ill.; or the U. S. Engineer Office, Room 41, Flood Bldg., San Francisco, Cal. CLINTON B. SEARS, Major, Corps of Engrs., U. S. Army, in Charge. 11-9t

ENGINEER OFFICE, U. S. Army, Room 2, Custom House, Norfolk, Va., March 30, 1903.—Sealed proposals for Rock Removal and constructing Riprap Dam in Roanoke River, near Weldon, N.C., will be received here until 12 m., April 30, 1903, and then publicly opened. Information furnished on application. 14-2t-eo.

U. S. ENGINEER OFFICE, New London, Conn., March 23, 1903.—Sealed proposals, in triplicate, for Dredging in Quinnipiac and Mill rivers, New Haven Harbor, Conn., will be received here until 12 noon, April 23, 1903, and then publicly opened. Information on application. CHAS. F. POWELL, Maj., Engrs. 13-4t

ECONOMICS OF

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By H. P. GILLETTE, C. E.

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Chapter III.—Gravel Roads.

Chapter IV.—Macadam Roads: What Holds Macadam Together—Quality of Stone—Quarrying — Dynamite—Crushing — Hauling — Spreading — Rolling — Sprinkling — Quality and Cost.

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Mundy, J S, Newark, N J
Petroleum Iron Wks Co, Washington, Pa
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Evans, F H, 596 Kent ave, Brooklyn
Steward & Somaine Mfg Co, 120 N 6th st, Phila

Boots and Shoes.
Putman, H J, & Co, 38 Bridge sq, Minneapolis

Brakes.
Brill, J G Co, Philadelphia, Pa
(see also Air Brakes.)

Brass Rolling Machinery.
Poole, Robert, & Son Co, Baltimore, Md

Brick.
Dickey, W S, Clay Mfg Co, Kansas City, Mo
Egyptian Silica Brick Process Co, Fredericksburg, Va
Jackson, John H, Albany, N Y
Johnsonburg Vit Brick Co, Johnsonburg, Pa
Mack Mfg Co, New Cumberland, West Virginia
McAvoy Vit Brick Co, 1345 Arch st, Philadelphia
Purington Paving Brick Co, Galesburg, Ill
Tomkins, Calvin, 120 Liberty st New York
Western Brick Co, Danville, Ill

Brick. (Fire.)
Maurer, Henry, & Son, 422 E 23d st, New York
New York Pottery Co, 12th ave & 36th st, N Y
Syracuse Stoneware Co, Syracuse, N Y

Brick Bond
Union Brick Bond Co, Pittsburg, Pa

Brick Machinery.
Bonnot Co, Canton, Ohio
Drake, C T, 300 W Jackson Boulevard Chicago

Bridge (Concrete).
Abertnaw Construction Co, Boston, Mas

Bridge Operating Machinery.
Edwards, Jos. & Co, 414 Water st, New York
Vulcan Iron Works, Chicago

Bridge Railings.
Albree, Chester H, 14-30 Market st, Allegheny, Pa
Belmont Iron Works, Philadelphia, Pa
King Bridge Co, Cleveland, O
Massillon Bridge Co, Massillon, Ohio
Stupp Bros. Bridge & Iron Co, St. Louis, Mo

Bridges and Buildings.
American Bridge Co, New York
Baltimore Bridge Co, Bush st & B & O R R, Baltimore
Bellefontaine Bridge & Iron Co, Bellefontaine, Ohio
Berlin Construction Co, Berlin, Conn
Boston Bridge Works, 47 Winter st, Boston, Mass
Champion Bridge Co, Wilmington, Ohio
Chicago Bridge & Iron Co, Chicago
Clinton Bridge & Iron Works, Clinton, Iowa
Columbia Bridge Co, Pittsburg
Concrete-Steel Engineering Co, Park Row bldg N
Easton Foundry & Machine Co, Easton, Pa
Eckhoff, Jr., & Co, John, Pittsburg, Pa
Fort Pitt Bridge Works, Pittsburg, Pa
Garry Iron & Steel Co, Coe and Lake sts, Cleveland
Havana Bridge Works, Montour Falls, N Y
Joliet Bridge & Iron Co, Joliet, Ill
Kinwood Bridge Co, First Nat. Bank bldg, Chicago
King Bridge Co, Cleveland, Ohio
Massillon Bridge Co, Massillon, Ohio
McClintic-Marshall Construction Co, Pottstown, Pa
Mo. Valley Bridge & Iron Works, Leavenworth, Kan
Mount Vernon Bridge Works, Mount Vernon, Ohio
New Castle Bridge Co Indianapolis
New England Structural Co, Boston, Mass
Parker, I A, 202-208 North First st, Terre Haute Ind
Passaic Rolling Mill Co, Paterson, N J
Penn Bridge Co, Beaver Falls, Pa
Pennsylvania Steel Co, Steelton, Pa
Phoenix Bridge Co, Phoenixville, Pa
Riter-Conley Mfg Co, 55 Water st, Pittsburg, Pa
Rogers Iron Co, Springfield, O
San Francisco Bridge Co, 251 Market st, San Franc
Scaife, W B, & Sons Co, Pittsburg, Pa
Shoemaker, Lewis F, & Co, Harrison bldg, Pa
Standard Bridge Co, Omaha
Strobel, C L, Monadnock block, Chicago, Ill
Stupp Bros. Bridge & Iron Co, St. Louis, Mo
Vale & Young, Baltimore, Md
Variety Iron Works Co, Cleveland, Ohio
Virginia Bridge & Iron Co, Roanoke, Va
Wabash Bridge & Iron Works, Wabash, Ind
Youngstown Bridge Co, 320 Broadway, New York

Bridges (Rolling Lift.)
Scherzer Rolling Lift Bridge Co, Chicago

Buckets (Automatic.)
Brown Hoisting Machinery Co, Cleveland
Hayward Co, 97 Cedar st, New York
Hunt, C W, Co, Richmond Terrace, W N Brighton, NY
Stuebner, G L, Long Island City, N Y
Union Iron Works, Hoboken, N J

Bumping Posts.
McCord & Co, 1445 Old Colony bldg, Chicago
Mechanical Mfg Co, Chicago

Bunkers (Suspension.)
Berquist, A S, 515 Bedford ave, Brooklyn, N Y

Burners (Oil.)
Hammel, C A 120 Fifth st, Los Angeles, Cal

Cableways (Suspension.)
Bacon, Earle C, 26 Cortlandt st, New York
Beatty M, & Sons, Welland, Ont
Broderick & Bascom Rope Co, St. Louis
Carson Trench Machine Co, 19 Dorrance st, Boston
Flory, S, Mfg Co, Bangor, Pa
Lambert Hoisting Engine Co, Newark, N J
Leschen, A, & Sons Rope Co, St. Louis
Lidgerwood Mfg Co, 96 Liberty st, New York
Macomber & Whyte Rope Co, 21 S. Canal st, Chicago
N. J. Foundry & Machine Co, 9 Murray st, N Y
Trenton Iron Co, Trenton, N J
United Telpherage Co, 20-22 Broad st, New York

Calking Yarn and Tools.
Ogden, J. Edward. Co, 149 Cedar st, New York

Car Couplers.
McConway & Torley Co Pittsburg, Pa
Railroad Supply Co, Bedford bldg, Chicago

Car Heating and Lighting.
Brill Co, J G, Philadelphia, Pa
Safety Car Heating & Lighting Co, 160 B'way, N Y

Car Trucks.
Brill, Co, J G Philadelphia, Pa

Car Wheels.
Brill Co, J G, Philadelphia, Pa
Cayuta Wheel & Foundry Co, Sayre, Pa
Ramapo Iron Works, Hillburn, N Y

Cars (Dump, Plantation, Flat, Hand, Logging Mining and Freight.)
Apex Equipment Co, 11 Broadway, New York
Austin, F C, Mfg Co, Harvey, Ill
Brill, J G, Co, Philadelphia, Pa
Efros Co, Chas, Bayonne, N J
Fairbanks, Morse & Co, Chicago
Ingoldsby Auto. Car Co, Chemical bldg, St. Louis
Koppel, Arthur, 68 Broad st, New York
National Drill & Mfg Co, 159 La Salle st, Chicago
Pressed Steel Car Co, Pittsburg, Pa
Ramapo Iron Works, Hillburn, N Y
Standard Steel Car Co, Frick bldg, Pittsburg
Steubner, G L, 176 Third st, Long Island City, N Y
Western Wheeled Scraper Co, Aurora, Ill
Wonham-Magor Eng. Wks, 29 Broadway, New York

Cars (Passenger & Freight.)
Brill, J G, Co, Philadelphia, Pa
Koppel, Arthur, 68 Broad st, New York

Cars (Wrecking and Lifting.)
Bucyrus Co, S. Milwaukee, Wis
Case Mfg Co, Columbus, O
Osgood Dredge Co, 37 State st, Albany N Y

Castings (Brass.)
Campbell, J B, Brass Works, Cascade st, Erie Pa

Castings (Iron.)
Builders Iron Foundry, Providence, R I
Brooks, T H, & Co, Cleveland, O
Coldwell-Wilcox Co, Newburg, N Y
Columbia Machine Works, 247 Chestnut st, Brooklyn
Crane & Co, Inc, A M, The Rookery, Chicago
Dimmick Pipe Co, Birmingham, Ala
Donaldson Iron Co, Emaus, Pa
Drummond, M J, & Co, 192 Broadway, New York
Du Bois Iron Works, Du Bois, Pa
Easton Foundry & Machine Co, Easton, Pa
Fox, John & Co, 253 Broadway, N Y
Massillon Iron & Steel Co, The Rookery, Chicago
Millar, Chas, & Son Co, Genesee st, Utica, N Y
Poole, Robert, & Son Co, Baltimore, Md
Reading Foundry Co, Ltd, Reading, Pa
Sessions Foundry Co, Bristol, Conn
Variety Iron Works Co, Cleveland, O
Warren Foundry & Machine Co, 160 Broadway, N Y
(see also Sewer and Street Castings)

Castings (Steel.)
Crane & Co, Inc, A M, The Rookery, Chicago

Cement (Portland.)
Alpha Portland Cement Co, Easton, Pa
Alsen's Am Portland Cement Wks, 45 Broadway, N Y
American Cement Co, 22 S 15th st, Philadelphia, Pa
Atlas Portland Cement Co, 30 Broad st, New York
Buckeye Portland Cement Co, Bellefontaine, Ohio
Coplay Cement Mfg Co, 1123 Broadway, N Y
Empire Portland Cement Co, Warners, N Y
Fredenburg & Lounsbury, Metropolitan bldg, N Y
French, Samuel H, & Co, Philadelphia
General Supply & Construct'n Co, 8-10 Bridge st, N
Glens Falls Portland Cement Co, Glens Falls, N Y
Hartranft, Wm G, Cement Co, Philadelphia
Helderberg Cement Co, Albany, N Y
Illinois Steel Co, Rookery, Chicago
Kelley Island Lime & Transport Co, Cleveland, Ohio
Lawrence Cement Co, 1 Broadway, New York
Lehigh Portland Cement Co, Allentown, Pa
Silesia Portland Cement Co, New York
Snyder, Hiram, & Co, 229 Broadway, New York
St Louis Portland Cement Co, Mfg Co, St Louis
Thorn Cement Co, 112 Church st, Buffalo, N Y
Vulcanite Portland Cement Co, 160 Fifth ave, N Y
Warner, Chas, Co, Wilmington, Del

Cement (Rosendale.)
Consolidated Rosendale Cem. Co, 26 Cortlandt st, N Y
Coplay Cement Mfg Co, 1123 Broadway, N Y
Cumberland (Md.) Cement Co, Mfg Co, P O Box 264
Meacham & Wright, Chamber of Commerce, Chicago
Milwaukee Cement Co, Milwaukee, Wis
Snyder, Hiram, & Co, 229 Broadway, New York
Tomkins, Calvin, 120 Liberty st, New York
Union Akron Cement Co, 141 Erie st, Buffalo, N Y
Western Cement Co, Louisville, Ky

Cement Kilns and Machinery.
Allis-Chalmers Co, Home Ins bldg, Chicago
Bartlett, C O, & Snow Co, Cleveland, Ohio
Bonnot Co, Canton, Ohio
Bradley Pulverizer Co, 42 State st, Boston, Mass
Clark, J C, Box 525, Atlanta, Ga
Dodge Mfg Co, Misnawaka, Indiana
Kent Mill Co, 170 Broadway, New York
Jeffrey Mfg Co, Columbus, Ohio
Smidth, F L, & Co, 60 Malden Lane, New York
Sturtevant Mill Co, 108 Clayton st, Boston
Vulcan Iron Works, Wilkesbarre, Pa
West Pulverizing Mach. Co, Jersey City, N J

Cement Mixer.
Alexander Iron Works, Syracuse, N Y

Chain Blocks.
Yale & Towne Mfg Co, 9-13 Murray st, New York

Chains.
Newhall Chain Forge & Iron Co, 9 Murray st, N Y

Channelers.
Ingersoll-Sergeant Drill Co, 26 Cortlandt st, N Y
Sullivan Machinery Co, 135 Adams st, Chicago, Ill

Chemists.
McKenna, Chas. F, 221 Pearl st, N Y
(see also Laboratories.)

Chimneys. (Brick.)
Custodis, A, Chimney Const'n Co, Bennett bldg, N Y

Coal and Ore Handling Machinery.
Aultman Co, Canton, Ohio
Bacon, Earle C, 26 Cortlandt st, New York
Berquist, A S, 515 Bedford ave, Brooklyn, N Y
Brown Hoisting Machinery Co, Cleveland, O
Exeter Machine Works, Pittston, Pa
Hayward Co, 97 Cedar st, New York
Hunt, C W, Co, Richmond Terrace, W N Brighton, NY
Jeffrey Mfg Co, Columbus, Ohio
King Bridge Co, Cleveland, Ohio
Lambert Hoisting Engine Co, Newark, N J
Lidgerwood Mfg Co, 96 Liberty st, N Y
Link Belt Engineering Co, Nicetown, Phila
Main Belting Co, 1219 Carpenter st, Philadelphia
Mead, John A, & Co, 7 Broadway, New York
N. J. Foundry & Machine Co, 9 Murray st, New York
Rawson & Morrison Mfg Co, Cambridgeport, Mass
Robins Conveying Belt Co, 14-21 Park Row. N Y
Simpson, H S, Mfg's Agt, Electric bldg, Cleveland
Steubner, G L, 176 Third st, Long Island City, N Y

Colleges (Engineering.) (see page IV.)

Concentrators.
Allis-Chalmers Co. Home Ins bldg, Chicago

Concrete Mixers.
Clyde Iron Works, Duluth, Minn
Cockburn Barrow & Mach. Co, Jersey City, N J
Contractor's Plant Co, 37 Pittsburg st, Boston
Contractors' Supply & Equip. Co, 222 5th av, Chicago
Drake, C T, 300 W Jackson Boulevard, Chicago
Fisher & Saxton Co, 123 G st, N E, Washington
Iroquois Iron Works, Buffalo
Kaltenbach & Griess, 1618 Williamson bldg, Cleveland
McKelvey Concrete Mach'y Co, Security bldg, Chicago
Municipal Engineering & Contr'g Co, Manhattan bldg, Chicago
Ransome Concrete Mach'y Co, 11 Broadway, N Y

Concrete Building Apparatus.
Farrell, Thos C, Washington, New Jersey

Condensers.
Alberger Condenser Co, 95 Liberty st, N Y
Allis-Chalmers Co, Home Ins bldg, Chicago
Davidson M T, 58 Keap st, Brooklyn, N Y
Dean Bros, Steam Pump Works, Indianapolis, Ind
Epping-Carpenter Co, Pittsburg
Guild & Garrison, So 10th st, Brooklyn, N Y
Stilwell-Bierce & Smith-Valle Co, Dayton, O
Worthington, Henry R, Brooklyn, N Y

Conduits (Pipe.)
American Vitrified Conduit Co, 170 Broadway, N Y
Blackmer & Post Pipe Co, St. Louis, Mo
Camp, H B, Co, 170 Broadway, New York
Eppinger & Russell Co, 66 Broad st, New York
Field, C J, 29 Broadway, New York
Standard Vitrified Conduit Co, 39 Cortlandt st, N Y
Wyckoff Pipe & Creosoting Co, Portsmouth, Va

Contractors.
Abbot-Gamble Contracting Co, St. Louis and N Y
American Pipe Mfg Co, 112 N Broad st, Philadelphia
Bates & Rogers Const'n Co, 1208 Manhattan bldg, Chic
Cook Well Co, St. Louis, Mo
Eastern Construction Co, 48 Classon ave, Brooklyn, NY
Eichleay, John, Jr, Co, Pittsburg
Esson, W A, & Co 1137 Stock Exchange bldg, Chicago
Foundation & Contracting Co, 37 Nassau st, New York
Gahagan, W H, 189 Montague st, Brooklyn, N Y
Gest, G M, Cincinnati and New York
Gillespie, T A, Co, Westinghouse bldg, Pittsburg, Pa
McCabe, Jas. F, 504 Equitable bldg, Baltimore, Md
McMullen, Arthur & Co, 13-21 Park Row bldg, N Y
O'Rourke, John F, Park Row bldg, New York
Philippine Eng & Const'n Co, P.O. Box 572, Manila, P.I.
Phillips & Worthington, 11 Broadway, New York
Quigley, R M, & Co, Laclede bldg, St. Louis, Mo
Regan & Mulock, D P, 4429 Chestnut st, Philadelphia
Snare & Triest, 39 Cortlandt st, New York
United Eng & Cont Co, 13-21 Park Row, New York
(see also Artesian Wells; Asphalt Paving; Bridges; Dredging; Wharf and Pier Builders.)

Contractors' Tools and Supplies.
Bond, H L, & Co, Pearl & Purchase sts, Boston, Mass
Crane & Co, Inc, A M, The Rookery, Chicago
Shannon, J Jacob, & Co, 1744 Market st, Philadelphia

Conveyors. (See Hoisting and Conveying Machinery; also see Trench Machines.)

Cooling Towers.
Alberger Condenser Co, 95 Liberty st, New York
Davidson, M T, 58 Keap st, Brooklyn, N Y
Worthington, Henry R, Brooklyn, N Y

Cranes.
Am. Hoist & Derrick Co, St. Paul, Minn
Brown Hoisting Machinery Co, Cleveland, O
Bucyrus Co, S Milwaukee, Wis
Case Mfg Co, Columbus, Ohio
Chicago Pneumatic Tool Co, Fisher bldg, Chicago
Industrial Works, Bay City, Mich
Kaltenbach & Griess, 1618 Williamson bldg, Cleveland
King Bridge Co, Cleveland, Ohio
Manning, Maxwell & Moore, 85 Liberty st, New York
Marion Steam Shovel Co, Marion, Ohio
Niles Tool Works Co, 136-138 Liberty st, New York
Pawling & Harnischfeger, 167 Clinton st. Milwaukee
Wood, R D, & Co, Philadelphia, Pa

Cranes (Portable).
North Penn Iron Co, 3d & Sedgley ave, Philadelphia

Creosoting.
American Creosote Works, New Orleans
Atlantic Creo & Wood Pres Works, Norfolk, Va
Carbolineum Wood Preserving Co, 13 Park Row, N Y
Eppinger & Russell Co, 66 Broad st, New York
International Creosoting & Con. Co, Galveston, Tex
New Orleans Wood Pres Works, New Orleans, La
Norfolk Creosoting Co, Norfolk, Va
U S Wood Preserving Co, 29 Broadway, New York
West Pascagoula Creosote W'ks, W Pascagoula, Miss
Wyckoff Pipe & Creosoting Co, Portsmouth, Va

Crucibles.
Dixon, Jos., Crucible Co, Jersey City, N J

Damper Regulators.
d'Este, Julian Co, 15 Canal st, Boston

Derrick and Derrick Fittings.
American Hoist & Derrick Co, St. Paul, Minn
Byers, John F, Machine Co, Ravenna, Ohio
Contractors' Plant Mfg Co, 130 Erie st, Buffalo, N Y
Dobbie Foundry & Machine Co, 198 Dey st, N Y
Hayward Co, 97 Cedar st, New York
Kaltenbach & Griess, 1618 Williamson bldg, Cleveland
Lambert Hoisting Engine Co, Newark, N J

Diamond Drills.
American Diamond Rock Drill Co, 95 Liberty st, N Y
Sullivan Machinery Co, 135 Adams st, Chicago

Differential Hoists.
Boston & Lockport Block Co, Boston, Mass

Ditching and Excavating Machinery.
Atlantic, Gulf & Pacific Co, Park Row bldg, N Y
Beatty, M, & Sons, Welland, Ont
Bucyrus Co, S. Milwaukee, Wis
Carson Trench Machine Co, 16 Dorrance st, Boston
Hayward Co, 97 Cedar st, New York
Marion Steam Shovel Co, Marion, Ohio
Osgood Dredge Co, Albany, N Y
Souther, John, & Co, 12 Post Office Square, Boston
Toledo Foundry & Machine Co, Toledo, Ohio
Vulcan Iron Works, Chicago
Vulcan Iron Works, Toledo
Western Wheeled Scraper Co, Aurora, Ill

Diver.
Falcon, Jos. G, 1110 Ayres Court, Evanston, Ill
Lowe Wrecking & Diving Co, 2 Coenties slip, N Y

Diving Apparatus.
Morse, Andrew J, & Son, 140 Congress st, Boston
Schrader's, A, Son, 32 Rose st, New York

Docks (Composite and Steel Floating).
Crandall, H I, & son Co, East Boston, Mass

Doors and Door Fittings.
Kinnear Mfg Co, Columbus, Ohio
N. J. Foundry & Machine Co, 9 Murray st, N Y
Wilson, J Godfrey, 3 W 29th St, N Y

Drafting Tables.
Emerson Mfg. Co, F W, Rochester, N Y
Hein Furniture Co, Toledo, O

Draftsman's Supplies. (see Instruments.

Drain Tile (see Pipe, Vitrified Clay.)

Dredging and Dredging Machinery.
Atlantic, Gulf & Pacific Co, Park Row bldg, N Y
Beatty, M, & Sons, Welland, Ont
Bowers, A B San Francisco, Cal
Bucyrus Co, S Milwaukee, Wis
Edwards, Jos., & Co, 414 Water st, New York
Ellicott Machine Co, Baltimore, Md
Falcon, Jos, G, 1110 Ayres Court, Evanston, Ill
Featherstone Fdy & Mach Co, 348 N. Halsted, Chicago
Hayward Co, 57 Cedar st, New York
Lawrence Machine Co, Lawrence, Mass
Marion Steam Shovel Co, Marion, Ohio
Morris Machine Works, Baldwinsville, N Y
Mundy, J S, Newark, N J
Osgood Dredge Co, Albany, N Y
Smith, Theo., & Bro, Jersey City, N J
Toledo Foundry & Machine Co, Toledo, Ohio
Vulcan Iron Works Co Toledo

Drilling and Boring Machines (Portable).
Knight Mfg Co, Canton, Ohio
Philadelphia Pneumatic Tool Co, Philadelphia
Stow Flexible Shaft Co, 26th & Callowhill sts, Phila
Stow Mfg Co, Binghamton, N Y
(see also Pneumatic Tools; also Rock Drills).

Drop Forgings.
Keystone Drop Forge Wks, 2001-63 Clearfield st, Phila

Drop Hammers.
Merrill Bros, 467 Kent ave, Brooklyn, N Y

Dry Docks (Marine Railway).
Crandall, H I, & Son Co, East Boston, Mass

Dryers (Cement).
American Process Co, 62 William st, New York
Bartlett, C O, & Snow Co, Cleveland, O
Crown Dryer Co, 129 Euclid ave, Cleveland
Cummer, F D, & Son Co, Cleveland, O
Ruggles-Coles Engineering Co, 41 Cortlandt st, N Y
Simpson, H S, Mfg's Agt, Electric bldg, Cleveland
West Pulverizing Machine Co, Jersey City, N J

Dynamite (see Explosives).

Dynamos.
C & C Electric Co, Central R R bldg, New York
Coho & Co, H B, 114 Liberty st, New York
General Electric Co, Schenectady, N Y
Storey Motor & Electric Co, Harrison, N J
Stow Mfg Co, Binghamton, N Y
Westinghouse Electric & Mfg Co, Pittsburg, Pa

Economizers (Fuel).
Green Fuel Economizer Co, Matteawan, N Y
Broomell, Schmidt & Steacy Co, York, Pa

Electric Storage Batteries.
Electric Storage Battery Co, Philadelphia

Elevators.
Marine Engine & Machine Co, 1123 Broadway, N Y
Morse Elevator Works, Philadelphia
Otis Elevator Co, 71 Broadway, N Y

Employment Bureaus.
Boston Engineering Agency, 7 Water st, Boston
Brotherhood Steam Shovel & Dredge Engrs., Chicago
Cleveland Engineering Agency, Box 71, Sta. B, Cleve
Engineering Agency, Monadnock blk, Chicago, Ill
Engineering Employment Bureau, Syracuse N Y
Hapgood Bureau, 257 Broadway, N Y
New York Engineering Agency, 35 Warren st, N Y

Engines. (Gas and Gasoline).
American Well Works, Aurora, Ill
Backus Water Motor Co, Newark, N J
Chase Machine Co, Cleveland
Dayton Globe Iron Works, 7 Ludlow st, Dayton, O
Fairbanks, Morse & Co, Chicago, Ill
Mietz & Weiss, 128 Mott st, New York
New Era Iron Work Co, 37 Dale ave, Dayton, O
Otto Gas Engine Works, Philadelphia, Pa
Snow, T W, (Otto Engine) 560 Dearborn st, Chicago
Springfield Gas Engine Co, Springfield, O
Struthers-Wells Co, Warren, Pa
Temple Pump Co, 15th Place, Chicago
U. S. Wind Eng. & Pump Co, 20 Water st, Batavia, Il
(see also Engines, Oil.)

Engines (Hoisting).
American Hoist & Derrick Co, St. Paul, Minn
Bacon, Earle C, 26 Cortlandt st, New York
Beatty, M, & Sons, Welland, Ont
Brown Hoisting Machinery Co, Cleveland, O
Byers, John F., Machine Co, Ravenna, Ohio
Chase Machine Co, Cleveland
Contractors' Plant Mfg Co, 130 Erie st, Buffalo, N Y
Fairbanks, Morse & Co, Chicago, Ill
Flory, S, Mfg Co, Bangor, Pa
Hunt, C W., Co, Richmond Terrace, W N Brighton, NY
Lambert Hoisting Engine Co, Newark, N J
Lidgerwood Mfg Co, 96 Liberty st, New York
Monighan's Machine Works, 813 Carroll ave, Chicago
Mundy, J S, Newark, N J
Potter Mfg Co, 2010 N W ave, Indianapolis, Ind
Rawson & Morrison Mfg Co, Cambridgeport, Mass
Vulcan Iron Works, Wilkesbarre, Pa
(see also Electric Hoists.)

Engines (Marine).
Buffalo Forge Co, Buffalo, N Y
Kingsford Foundry & Machine Works, Oswego N Y
Morris Machine Works, Baldwinsville, N Y
Otto Gas Engine Works, Philadelphia, Pa

Engines (Oil)
Aultman Co, Canton, Ohio
Mietz & Weiss, 128 Mott st, New York

Engines (Portable).
Buffalo Pitts Steam Roller Works, Buffalo, N Y
Port Huron Engine Co, Port Huron, Mich

Engines (Steam).
Allis-Chalmers Co, Home Ins bldg, Chicago
Buffalo Forge Co, Buffalo, N Y
Erie Pump & Engine Co, Erie, Pa
Fairbanks, Morse & Co, Chicago
Featherstone Fdy & Mach Co, 348 N. Halsted, Chicag
Harrisburg Foundry & Mach Co, Harrisburg, Pa
Lawrence Machine Co, Lawrence, Mass
Leffel, Jas. & Co, Springfield, O
Morris Machine Works, Baldwinsville, N Y
Southwark Foundry & Machine Works, Philadelphia
Sturtevant, B F, Co, Boston, Mass
Struthers, Wells & Co, Warren, Pa
Vulcan Iron Works, Wilkesbarre, Pa

Engines (Traction).
Aultman Co, Canton, O
Heisler, Chas. L, Erie, Pa
Kelly, O S, Co, Springfield, O
Port Huron Engine Co, Port Huron, Mich

ADVERTISERS' CLASSIFIED DIRECTORY.

Excavators and Excavating Machinery (see Ditching and Excavating Machinery and Steam Shovels.)
Exhaust Heads
Burt Mfg. Co., Akron, O
Expanded Metal.
Assoc Exp Metal Co, Room 1209, 256 Broadway, N Y
General Fireproofing Co, Youngstown, O
Truss Metal Lath Co, 1 Gold st, New York
Youngstown Iron & Steel Roofing Co, Youngstown, O
Explosives.
Explosives Mfg Co, Kinetra, N Y
Electric Exploder Co, 220 Liberty st, N Y
Kirk, Arthur & Son, Co, 916 Duquesne Way, Pittsburg
Faucets.
Campbell, J B, Brass Works, Cascade st, Erie, Pa
Feed Water Heaters.
Allis-Chalmers Co, Home Ins bldg, Chicago
Erie Machine Shops, Erie, Pa
Gem City Boiler Co, Dayton, O
Green Fuel Economizer Co, Matteawan, N Y
Harrison Safety Boiler Wks, 3166 N 17th st, Phila
Patterson, Frank E, & Co, 25 Church st, New York
Robertson, Jas L, & Sons 192 Fulton st, New York
Stilwell-Bierce & Smith-Valle Co, Dayton, O
Feed Water Purifiers.
Industrial Water Co, 138 Liberty st, New York
Pittsburg Filter Mfg Co, Pittsburg, Pa
Smith, W B, Perth Amboy, N J
Fencing. (Wire).
American Steel & Wire Co, New York & Chicago
Jones National Fence Co, Columbus, O
Lamb Wire Fence Co Adrian, Mich
Fillet. (Leather).
Butler, A G, 284 Pearl st, New York
Filing Cases.
Art Metal Construction Co, Jamestown, N Y
General Fireproofing Co, Youngstown, O
Filter Presses.
Stilwell-Bierce & Smith-Valle Co, Dayton, Ohio
Filters.
Stilwell-Bierce & Smith-Valle Co, Dayton, O
Deutsch, W M, 141 Broadway, N Y
Jackson Filter Mfg Co, St Louis
Loomis-Manning Filter Co, Philadelphia, Pa
Maignen Filtration Co, 1310 Arch st, Philadelphia
N Y Continental-Jewell Co, 15 Broad st, N Y
Norwood Engineering Co, Florence, Mass
Pittsburg Filter Mfg Co, Pittsburg, Pa
Ross Valve Co, Troy, N Y
Scaife, Wm. B. & Sons Co, Pittsburg
Filters (Oil).
Burt Mfg Co, Akron, O
Robertson, Jas L, & Sons, 192 Fulton st, New York
Fire Department Supplies.
Morse, Andrew J, & Son, 140 Congress st, Boston, Mass
Fire Proofing.
Aberthaw Construction Co, Boston, Mass
Berger Mfg Co, Canton, O
Bromley, A H, Jr, 112 N Broad st, Philadelphia
Hennebique Patents 1123 Broadway, N Y
Metropolitan Fire Proofing Co, Trenton, N J
Roebling Construction Co, 121 Liberty st, New York
St Louis Expanded Metal Fireproofing Co, St Louis
Wight, W N, & Co, 160 Fifth ave, New York
(see also Expanded Metal, also Concrete Steel Construction.)
Fire Proofing (Hollow Tile).
Maurer, Henry & Sons, 422 E 23d st, New York
Fire Proofing (Wood).
Electric Fireproofing Co, 19th st, and East River, N Y
Fittings (Flanged).
McLeod Co, 95 Liberty st, New York
Flexible Pipe Joint.
Falcon, Jos. G, 1110 Ayres Court, Evanston, Ill
Holmes, A L, Grand Rapids, Mich
Flexible Shafts.
Stow Flexible Shaft Co, 16th & Callowhill sts, Phila
Stow Mfg Co, Binghamton, N Y
Flue Lining (Fire Clay).
Jackson, John H, Albany, N Y
Monmouth Mining & Mfg Co, Monmouth, Ill
New York Pottery Co, 12th ave & 36th sts, N Y
Syracuse Stoneware Co, Syracuse, N Y
Flush Tanks.
Pacific Flush Tank Co, 48 La Salle st, Chicago Ill
Fly Wheels.
Poole, Robert, & Son Co, Baltimore, Md
Forges (Portable).
Buffalo Forge Co, Buffalo, N Y
Roots, P H & F M, Co, Connersville, Ind
Tate, Jones & Co, Pittsburg Pa
Forgings.
Abbot, Chester B, 14-30 Market st, Allegheny, Pa
Baker, Jas H, Mfg Co, 508 Park bldg, Pittsburg, Pa
Brill, J G, Co, Philadelphia, Pa
Cleveland City Forge & Iron Co, Cleveland
Keystone Drop Forge Wks, 301-43 Clearfield st, Phila
Pennsylvania Steel Co, Steelton, Pa
Friction Clutches.
Brown Hoisting Machinery Co, Cleveland
Dodge Mfg Co, Mishawaka, Indiana
Link Belt Engineering Co, Nicetown, Philadelphia
Smith, S Morgan, Co, York, Pa
Frogs, Switches and Crossings.
Elliot Frog & Switch Co, East St. Louis, Ill
N Y Switch & Crossing Co, Hoboken, N J
Pennsylvania Steel Co, Steelton, Pa
Ramapo Iron Works, Hillburn, N Y
Weir Frog Co, Cincinnati, Ohio
Fuel Economizers (see Economizers).
Furnaces (Gas).
American Gas Furnace Co, 23 John st, New York
Furnaces (Oil).
Petroleum Iron Works, Washington, Pa
Tate, Jones & Co, Empire bldg, Pittsburg
Furniture (Steel).
General Fireproofing Co, Youngstown, O
Gages (Steam).
Crosby Steam Gage & Valve Co, Boston
Galvanized Iron and Steel.
Am Sheet Steel Co Battery Park bldg, New York
Galvanizing Kettles.
Columbiana Boiler Co Columbiana, Ohio
Enterprise Boiler Co, Youngstown, Ohio
Garbage Dump Carts (see Wagons and Carts).
Garbage Furnace.
Morse-Boulger Destructor Co, 39 Cortlandt st, N Y
Smith-Siemens Garbage Furnace, 141 Broadway, N Y
Gas Fittings.
Campbell, J B, Brass Works, Cascade st, Erie, Pa
Gas Holders.
Wood, R D, & Co, 400 Chestnut st, Philadelphia
(see also Stand-Pipes and Tanks.)
Gas Machinery.
American Gas Furnace Co, 23 John st, New York
Gas Machinery Co, Cleveland, O
National Drill & Mfg Co, Chicago, Ill
Norwalk Iron Works, South Norwalk, Conn
Roots, P H, & F M, Co, Connersville, Ind
Wood, R D, & Co, Philadelphia, Pa
Gas Works.
Gas Machinery Co, Cleveland, Ohio
Gaskets.
McCord & Co, 1445 Old Colony bldg, Chicago
U S Mineral Wool Co, 143 Liberty st, New York
Gates (Railway).
Jones National Fence Co, Columbus, O
Pneumatic Signal Co, 1122 Broad-Exchange bldg, N Y
Gearing.
Caldwell, H W, & Son Co, Chicago
Morse Elevator Works, Philadelphia
Poole, Robert, & Son Co, Baltimore, Md
Smith, S. Morgan, Co, York, Pa
Gear-Wheels.
Taylor Iron & Steel Co, High Bridge, N J
Gloves (Hand Made).
Luther, J P, Glove Co, 526 Pearl St, Berlin, Wis
Governors (Water-Wheel).
Lombard Governor Co, 36 Whittier st, Boston
Replogle Governor Works, Chestnut st, Akron, O

Graders.
Austin Mfg Co Manhattan bldg, Chicago
National Drill & Mfg Co, 119 La Salle st, Chicago
Port Huron Engine Co, Port Huron, Mich
Stuart Grader Co, Oberlin, O
Western Wheeled Scraper Co, Aurora, Ill
Grain Elevators (see Tanks, grain storage.)
Granite (see Stone, also Paving Blocks).
Graphite.
Detroit Graphite Mfg Co, Detroit, Mich
Dixon, Jos., Crucible Co, Jersey City, N J
Goheen Mfg Co, Canton, Ohio
Internat'l Acheson Graphite Co, Niagara Falls, N Y
Grate Bars.
Dobbie Foundry & Mach Co, 138 Dey st, N Y
Robertson, Jas L, & Sons, 192 Fulton st, New York
Greenhouses.
National Skylight & Const'n Co, 120 Liberty st, N Y
Plenty, Josephus, Jersey City, N J
Hanger (Joist).
Clark Co, W J, Salem, Ohio
Columbian Hardware Co, Cleveland, Ohio
Duplex Hanger Co, Cleveland, Ohio
Headlights (Locomotive).
Brill, J G, Co, Philadelphia
Dressel Ry Lamp Works, 3836 Park ave, New York
Railroad Supply Co, Bedford bldg, Chicago
Heating and Ventilating (Steam & Hot Water
American Blower Co, Detroit
Am. District Steam Heating Co, Lockport, N Y
Keeler, E, Co, Williamsport, Pa
Mass. Fan Co., Waltham, Mass
Hoisting Engines (see Engines, Hoisting).
Hoisting and Conveying Machinery.
Aultman Co, Canton, O
Beatty, M, & Sons, Welland, Ont
Bartlett, C O, & Snow Co, Cleveland, O
Brown Hoisting Machinery Co, Cleveland, O
Byers, John F, Machine Co, Ravenna, O
Caldwell, H W, & Son Co, 17th st & Western ave, Chic
Cresson Co Geo Y, Philadelphia
Carson Trench Machine Co, Boston, Mass
Dodge Mfg Co, Mishawaka, Indiana
Exeter Machine Works, Pittston, Pa
Garland, M, Co, Bay City, Mich
Hunt, C W, Co, Richmond Terrace, W N Brighton NY
Jeffrey Mfg Co, Columbus, Ohio
Kaltenbach & Griess, 1618 Williamson bldg, Cleveland
King Bridge Co, Cleveland, Ohio
Lidgerwood Mfg Co, 96 Liberty st, New York
Lambert Hoisting Engine Co, Newark, N J
Link Belt Engineering Co, Nicetown, Philadelphia
Main Belting Co, 1219 Carpenter st, Philadelphia
Mead, John A, & Co, 7 Broadway, N Y
Pawling & Harnishfeger, 167 Clinton st, Milwaukee
Robins Conveying Belt Co, 14-21 Park Row, N Y
Steel Cable Engineering Co, 120 Liberty st, New York
Trenton Iron Co, Trenton, N J
Union Iron Works, Hoboken, N J
United Telpherage Co, 20-22 Broad st, N Y
Hoists (Electric).
Hunt, C W, Co, Richmond Terrace, WN Brighton, NY
Lambert Hoisting Engine Co, Newark, N J
Lidgerwood Mfg. Co, 96 Liberty st, N Y
Pawling & Harnischfeger, 167 Clinton st, Milwaukee
Rawson & Morrison Mfg Co, Cambridgeport, Mass
United Telpherage Co, 20-22 Broad st, New York
Hoists (Pneumatic).
Chicago Pneumatic Tool Co, Fisher bldg, Chicago
Christensen, N A, 1212-17 Herman bldg, Milwaukee
Hooks (Hoist, Grab, etc.)
Baker, Jas. H, Mfg Co, 503 Park bldg, Pittsburg
Roebling's, John A. Sons Co, Trenton, N J
Hose (Metal).
Moore Chas. C, & Co, 32 First st, San Francisco
Hose (Rubber).
McKiernan Drill Co, 170 Liberty st, N Y
Hose (Suction).
Edson Mfg Co, 255 Atlantic ave, Boston
Hydrants and Valves.
Bourbon Copper & Brass Works, Cincinnati, O
Cayuta Wheel & Foundry Co. Sayre, Pa
Chapman Valve Mfg Co, Indian Orchard, Mass
Clow, J B & Sons, Lake & Franklin sts. Chicago
Coffin Valve Co, Boston, Mass
Coldwell-Wilcox Co, Newburg, N Y
Darling Pump & Mfg Co, Box E, Williamsport, Pa
Dimmick, J K, & Co, 1049-51 Drexel bldg, Phila
Drummond, M J, & Co, 192 Broadway, N Y
Fox, John & Co, 253 Broadway, N Y
Kennedy Valve Mfg Co, 50 Beekman st, N Y
Loetzer Valve & Mfg Co, Towanda, Pa
Ludlow Valve Mfg Co, Troy, N Y
McLean, John, 298 Monroe st, New York
Millar, Chas. & Son, Co, Utica, N Y
Norwood Engineering Co, Florence, Mass
Reading Foundry Co, Ltd, Reading, Pa
Ross Valve Co, Troy, N Y
Smith, A P, Mfg Co, Newark, N J
Thompson, J, & Co, Philadelphia, Pa
Wood, R D, & Co, Philadelphia, Pa
Hydraulic Jacks.
Watson-Stillman Co 210 E. 43d st, New York
Hydraulic Leather Packing.
Darling Pump & Mfg Co, Box E, Williamsport, Pa
Detroit Leather Specialty Co, 900 Michigan av, Detroit
Hydraulic Machinery.
Dayton Globe Iron Work Co, 7 Ludlow st, Dayton, O
Deming Co, Salem, Ohio
Pelton Water Wheel Co, 134 Main st, San Francisco
Watson-Stillman Co, 210 E 43d st, New York
Wood, R D, & Co, Philadelphia, Pa
Hydraulic Presses.
Watson-Stillman Co, 204 E 43d st, New York
Wood, R D & Co, 400 Chestnut st, Philadelphia
Hydraulic Rams.
Pelton Water Wheel Co, 134 Main st, San Francisco
Ice and Refrigerating Machinery.
Featherstone Fdy & Mach Co. 348 N Halsted, Chicago
Indicators (Steam Engine).
Ashcroft Mfg Co, 85 Liberty st, New York
Crosby Steam Gage & Valve Co, Boston, Mass
Robertson, Jas L. & Sons, 192 Fulton st, N Y
Injectors.
Hayden & Derby Mfg Co, 85 Liberty st, New York
Lunkenheimer Co. Cincinnati, Ohio
Instruments (Engineering, Drafting).
Ainsworth, Wm. & Sons, Denver Colorado
Albrecht, C. R., 62 Fulton st, New York
Aloe, A S, Co, 414 N Broadway, St. Louis, Mo
Alteneder, Theo, & Sons, 945 Ridge ave, Phila, Pa
Archts' & Engrs' Supply Co, 1011 Walnut st, Kan. City
Beckman, L, 57 Adams st, Toledo, Ohio
Berger, C L, & Sons, 9 Williams st, Boston, Mass
Brandis, F E, Sons & Co, 814 Gates ave, Brooklyn, NY
Brown & Sharpe Mfg Co, Providence, R I
Buff & Buff Co, J P Station, Boston, Mass
Dietzgen, Eugene, Co, 181 Monroe st, Chicago
Engineers' Instrument Exchange, Scranton, Pa
Gurley, W & L E, Troy, N Y
Hardtmuth, L & C, 49 Parclay st, New York
Heller & Brightly Spring Garden st & Ridge av, Phila
Hetherschied Mfg Wks, Grand Rapids, Mich
Keuffel & Esser Co, 127 Fulton st New York
Knight, F C, & Co, 400 Locust ave, Philadelphia Pa
Koelsch & Co, 138 Fulton st, New York
Ledder, G G, 302 School st, Boston
Lietz, A, Co, 422 Sacramento st, San Francisco, Cal
Mahn & Co, 305-322 Olive st, St. Louis
Pfister, Herm, 428 Plum st, Cincinnati, O
Prince, L M, 108 West 4th st, Cincinnati, O
Queen & Co, Inc, Philadelphia, Pa
Saegmuller, G N, Washington, D C
Sala, J C, 429 Montgomery st, San Francisco
Schwencke, Kirk & Co, 26 Church st, New York
Soltmann, E G, 123 E 42d st, New York
Stackpole & Bro, 39 Fulton st, New York
Stanley, W F, & Co, Great Turnstile, Holborn, London
Steckenreiter Mfg Co, Chicago, Ill
Ulmer, J C, & Co, 224 Champlain st, Cleveland, Ohio
Universal Drafting Mach Co, Blackstone bldg, Cleve
Weber, F, & Co, Philadelphia
Williams, Brown & Earle, 918 Chestnut st, Phila
Wittstock, P & R, Berlin, S. 59, Germany
Young & Sons, 43 N. 4th st, Philadelphia

Insulating Materials.
Standard Paint Co, 103 William st, New York
Iron Work (Ornamental).
Albree, Chester B, 14-30 Market st, Allegheny, Pa
Belmont Iron Works, Philadelphia Pa
Brooks, T H, & Co, Cleveland, O
Rogers Iron Co. Springfield, O
Schriefer, L, & Sons Co, Cincinnati, O
Snead & Co Iron Works, ft of Pine st, Jersey City, N J
Walton Iron Co, Cincinnati, O
Iron Work (Structural).
(see Structural Steel and Iron Work.)
Jacks
Duff Mfg Co, Allegheny, Pa
Norton, A O, 286 Congress st, Boston
Watson-Stillman Co, 210 E 43d st, N Y
Labor (Italian).
Greco, Jas, 108 Bayard st, New York
Italo-American Trust Co, 725 Carpenter st, Phila
Yuzzolino, N, 53 Mulberry st, New York
Laboratories (Chemical and Testing).
Booth, Garrett & Blair, Philadelphia, Pa
Hunt, R W, & Co, Rookery, Chicago
McKenna, Chas F, 221 Pearl st, New York
Pittsburg Testing Laboratory, Pittsburg, Pa
Riehle Bros. Test & Machine Co, Philadelphia, Pa
Lamps (Electric).
General Electric Co, Schenectady, N Y
Westinghouse Electric & Mfg Co, Pittsburg
Lathing (Metallic).
Berger Mfg Co, Canton O
General Fireproofing Co, Youngstown, O
(see also Fireproofing.)
Lead (Pig).
Millar, Chas & Son Co, Utica, N Y
Ogden, J Edward Co, 147 Cedar st, New York
Lead Furnaces.
McLean, John, 298 Monroe st, New York
Ogden, J Edward Co, 147 Cedar st, New York
Union Iron Works, Hoboken, N J
Light (Contractors').
Kilson Hydro-Carbon Htg & Lighting Co, Phila
Macleod & Co, Walter, Cincinnati Ohio
Wells Light Co, 44 Washington st, New York
Locomotive Tires.
Latrobe Steel Co, 1200 Girard bldg, Philadelphia, Pa
Locomotives.
American Locomotive Co, 25 Broad st, New York
Baldwin Locomotive Works, Philadelphia, Pa
Heisler, Charles L, Erie, Pa.
Porter, H K Co Pittsburg, Pa.
Locomotives (Contractors').
Avery, C F, 114 Liberty st, New York
Byers, John F, Machine Co, Ravenna, Ohio
Fitz-Hugh & Co, Chicago and New York
Porter, H K, Co, Pittsburg, Pa
Vulcan Iron Works, Wilkesbarre, Pa
Locomotives (Electric and Mining).
Baldwin Locomotive Works, Philadelphia, Pa
Brill, J G, Co, Philadelphia
General Electric Co, Schenectady, N Y
Jeffrey Mfg Co, Columbus, O
Koppel, Arthur, 66 Broad st, New York
Patton & Co, J. R., House bldg, Pittsburg, Pa
Porter, H K, Co, Pittsburg, Pa
Westinghouse Electric & Mfg Co, Pittsburg
Locomotive Headlights.
(see Headlights, Locomotives.)
Locomotives (Second hand).
(See Railway Equipment, Dealers.)
Lubricants.
Dixon, Jos, Crucible Co, Jersey City, N J
Lubricators.
Crane Co, Chicago, Ill
Lunkenheimer Co, Cincinnati, Ohio
Lumber (Creosoted).
American Creosote Works, Ltd, New Orleans, La
Atlantic Creo & Wood Pres Wks, 10 Bridge St, N Y
Carbolineum Wood Pres Co, 13 Park Row, N Y
International Creosoting & Con Co, Galveston, Tex
Norfolk Creosoting Co, Norfolk, Va
Wyckoff Pipe & Creosoting Co, Portsmouth, Va
(see also Creosoting)
Lumber (Dock).
Vanderbilt & Hopkins, 126 Liberty st, New York
Machinery (Second hand).
Braden, Jas A, 514 Park Row bldg, New York
Briggs, Marvin, 12 Broadway, New York
Carlin Machy & Supply Co, 186 Lacock st, Allegheny
Chicago House Wreck Co, W. 35th & Iron sts, Chicago
Contractors' Supply Co, 1531 Monadnock blk Chicago
Contractors' Plant Depot, 29 William st, New York
Donaldson & Newton, 421 Chestnut st, Philadelphia
Driscoll, J. T., McCormick bldg, Chicago
Efros Co, Chas, Bayonne, N J
Everson & Co, E W, Roxbury Crossing, Mass
Fitz-Hugh Co, Monadnock block, Chicago
Grant & Harper Machy Co, Park Row bldg, New York
Low, Edgar S, Co, Empire bldg, Pittsburg
Saxton, J C, 18 Broadway, New York
Troy Public Works Co, Mann bldg, Utica, N Y
Ulman, Jacob, 44 Lloyd st, Buffalo, N Y
Whitney, G R, 39 Cortlandt st, New York
Young, E B, & Sons, Titusville, Pa
Machine Tools.
Manning, Maxwell & Moore, 85 Liberty st, New York
Niles Tool Works Co, 136-138 Liberty st, New York
Mail Chutes.
Cutler Mfg Co, Rochester, N Y
Manholes and Covers.
(See Sewer and Street Castings; also Castings, Iron.)
Measure (Rotary).
Steckenreiter Mfg Co, 98 Lake st, Chicago, Ill
Measuring Tapes. (Steel).
Chicago Steel Tape Co, 568 Temple Court, Chicago
Johnston, Robt, Wilkesbarre, Pa
Lufkin Rule Co, Saginaw, Mich
Starrett, L S, Co, 86 Crescent st, Athol, Mass
Merchandise Checks.
Am. Ry Supply Co, 24 Park Place, New York
Mechanical Draft.
American Blower Co, Detroit
Buffalo Forge Co, Buffalo, N Y
Sturtevant, B F, Co, Boston, Mass
(see also Blowers.)
Metal Hose (See Hose, Metal).
Meters (Current).
Berger, C L, & Sons, 9 Province st, Boston, Mass
Meters (Electric).
General Electric Co, Schenectady, N Y
Westinghouse Electric & Mfg Co, Pittsburg
Meters (Gas).
Pittsburg Meter Co East Pittsburg, Pa
Meters (Water).
Buffalo Meter Co, 363 Washington st, Buffalo
Builders Iron Foundry, Providence, R I
Cole, E S, 635 Park Row bldg, New York
Hersey Mfg Co, Boston, Mass
Neptune Meter Co, 253 Broadway, New York
Pittsburg Meter Co, East Pittsburg, Pa
Thomson Meter Co, 79 Washington st, Brooklyn, N Y
Union Water Meter Co, Worcester, Mass
Worthington, Henry R, Brooklyn, N Y
Mining Machinery.
Allis-Chalmers Co, Home Ins bldg, Chicago
American Diamond Rock Drill Co, 95 Liberty st N Y
Blanton, E A, Jr, The Bourse, Philadelphia
Bradley Pulverizer Co, 92 State st, Boston, Mass
Bucyrus Co, S. Milwaukee, Wis
Fairbanks, Morse & Co, Chicago
General Electric Co, Schenectady, N Y
Jeffrey Mfg. Co, Columbus, O
Lidgerwood Mfg Co, 96 Liberty st, N Y
Marion Steam Shovel Co, Marion, Ohio
Rand Drill Co, 128 Broadway, N Y
Sullivan Machinery Co, 136 Adams st, Chicago, Ill
Vulcan Iron Works, Wilkesbarre, Pa

Mortar Mixers.
Drake, C T, 300 W Jackson Boulevard, Chicago
Fisher & Saxton Co, 123 G st, N E, Washington
Motors (Electric). (see Dynamos.)
Non-Conducting Covering.
U S Mineral Wool Co, 143 Liberty st, New York
Nut Locks.
National Elastic Nut Co, Milwaukee, Wis
Oil Burners.
Hammel, C A, 120 Fifth st, Los Angeles, Cal
Oil Cups.
Crane Co, Chicago, Ill
Lunkenheimer Co, Cincinnati, Ohio
Oil Mill Machinery.
Stilwell-Bierce & Smith-Valle Co, Dayton, Ohio
Oil Pumps.
Sterrett Pump Co, 69 E 6th st, St. Paul
Oilless Bearings.
No Am Metaline Co, 6 West ave, Long Island City, N Y
Ore Handling Machinery.
(see Coal and Ore Handling Machinery.)
Packing.
Detroit Leather Specialty Co, 900 Michigan av, Detro
Robertson, Jas L, & Sons, 192 Fulton st, New York
Painting Machines (Pneumatic).
Hook, F E, Hudson, Mich
Macleod & Co, Walter, Cincinnati, O
Paint Pigment.
Internat'l Acheson Graphite Co, Niagara Falls N Y
Paints.
Carbolineum Wood Pres Co, 13 Park Row, N Y
Chilton Paint Co, 69 Cortlandt st, N Y
Detroit Graphite Mfg Co, Detroit, Mich
Dixon, Jos, Crucible Co, Jersey City, N Y
Goheen Mfg Co, Canton, Ohio
Heath & Milligan Mfg Co, Chicago
Hook, F E, Hudson, Mich
Michigan Paint Co, 45 Woodland ave, Cleveland, O
National Paint Works, Williamsport, Pa
Rinald Bros, 1142 N Hancock st, Philadelphia
Sicilian Asphalt Paving Co, Times bldg, New York
Standard Paint Co, 103 William st, New York
Toch Bros, New York
Paint (Cold Water).
Bird & Co, J A & W, 10 Well st, Boston
Patent Attorneys.
Hill, Thos A, 261 Broadway, New York
Straley, Hasbrouck & Schloeder, 257 Broadway, N Y
Patterns (Wood).
Balkwill Pattern Works, 970 Hamilton st. Cleveland
Pattern Letters.
Butler, A G, 284 Pearl st, New York
Paving (Bituminous-Macadam).
Warren Bros Co, 93 Federal st, Boston
Paving Blocks (Stone).
Leopold, J, & Co, 18 Broadway, New York
(See also Stone.)
Paving Brick (see Brick).
Perforated Metals.
Harrington & King Perforating Co, Chicago, Ill
Pile Driving Machinery.
American Hoist & Derrick Co, St. Paul, Minn
Beatty, M, & Sons, Welland, Ont
Bucyrus Co, South Milwaukee Wis
Contractors' Plant Mfg Co, Buffalo, N Y
Lidgerwood Mfg Co, 96 Liberty st, N Y
Mundy, J S, Newark, N J
Toledo Foundry & Machine Co, Toledo, Ohio
Vulcan Iron Works, Chicago, Ill
Pile Hammers.
Vulcan Iron Works, Chicago, Ill
Piling.
American Creosote Works, Ltd, New Orleans, La
Atlantic Creosot. & Wood Pres. Co, 10 Bridge st, N Y
Eppinger & Russell Co, 66 Broad st, New York
Meredith J P, Memphis, Tenn
New Orleans Wood Preserving Works, New Orleans
Norfolk Creosoting Co, Norfolk, Va
Wyckoff Pipe & Creosoting Co, Portsmouth, Va
Pipe (Cast Iron).
Builders Iron Foundry, Providence, R I
Byers, John F, Machine Co, Ravenna, Ohio
Clow, J B, & Sons, Lake and Franklin sts, Chicago
Dimmick Pipe Co, Birmingham, Ala
Dimmick, J K, & Co, 1049-51 Drexel bldg, Phila
Donaldson Iron Co, Emaus, Pa
Drummond, M J, & Co, 192 Broadway, New York
Fox, John, & Co, 253 Broadway, New York
Massillon Iron & Steel Co, The Rookery, Chicago
Millar, Chas, & Son Co, Utica, N Y
Reading Foundry Co, Ltd, Reading, Pa
Snow, F W, 360 Dearborn st, Chicago, Ill
U S Cast Iron Pipe & Fdry Co, 217 La Salle st, Chicago
Warren Foundry & Machine Co, 160 Broadway, N Y
Wood, R D, & Co, Philadelphia, Pa
Pipe (Culvert). See Pipe, Vitrified Clay.
Pipe (Lead).
Millar, Chas, & Son Co, Utica, N Y
Pipe (Riveted Steel).
Carroll-Porter Boiler & Tank Co, Pittsburg, Pa
Columbiana Boiler Co, Columbiana, Ohio
Gillespie, T A, Co, Pittsburg, Pa
Keeler, E, Co, Williamsport, Pa
McNeil, Jas, & Bro, 29th & Railroad sts, Pittsburg, Pa
Means & Fulton Iron Works, Birmingham, Ala
Pelton Water Wheel Co, 134 Main st, San Francisco
Scaife, Wm B, & Sons Co, Pittsburg, Pa
Tallerday Steel Pipe & Tank Co, Waterloo, Ia
Warren City Tank & Boiler Works, Warren, O
Weigele Riveted Steel Pipe Works, Denver, Colo
Pipe (Spiral Riveted).
Am Spiral Pipe Works, 64-66 Wabash ave, Chicago
Pipe (Vitrified Clay).
American Sewer Pipe Co, Pittsburg, Pa
Blackmer & Post Pipe Co, St Louis, Mo
Dickey, W S, Clay Mfg Co, Kansas City, Mo
Evens & Howard Fire Brick Co, St Louis, Mo
Illinois Mfg Co, Macomb, Ill
Jackson, John H, Albany, N Y
Millar, Chas, & Son Co, Utica, N Y
Monmouth Mining & Mfg Co, Monmouth, Ill
New York Pottery Co, 12th ave & 36th st, N Y
Robinson Bros & Co, Akron, O
Syracuse Stoneware Co, Syracuse, N Y
Pipe (Wooden).
American District Steam Co, Lockport, N Y
Wyckoff Pipe & Creosoting Co, Portsmouth, Va
Pipe (Wrought Iron).
Crane Co, Chicago, Ill
Fox, John & Co, 253 Broadway, New York
National Tube Co, Pittsburg, Pa
Pittsburg Pipe & Iron Co, Allegheny, Pa
California Redwood Pipe Co, Los Angeles
Pipe Casing.
U S Mineral Wool Co, 143 Liberty st, New York
Pipe Cutting and Threading Machines.
Saunder's, D, Sons, Yonkers, N Y
Pipe Fittings and Flanges.
Crane Co, Chicago, Ill
Darling Pump & Mfg Co, Box E, Williamsport, Pa
Latrobe Steel Co, Girard bldg, Philadelphia
National Tube Co, Pittsburg
Thompson, J, & Co, Van Horn & Sophia sts, Phila P
Tight Joint Co, 306-310 East 47th st, New York
Walworth Mfg Co, Boston
Pipe Joint (High Pressure).
Tight Joint Co, 306-310 East 47th st, New York
Walworth Mfg Co, Boston
Pipe Jointers.
Watkins, Thos, Johnstown, Pa
Pipe Laying (Submarine).
Falcon, Jos G, 1110 Ayers Court, Evanston, Ill
Holmes, A L, Grand Rapids, Mich
Low Wrecking & Diving Co, 2 Coenties Slip, N Y
Pipe Line Supplies.
Ogden, J Edward Co, 147 Cedar st, New York

ADVERTISERS' CLASSIFIED DIRECTORY.

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Air Brakes.
Westinghouse Air Brake Co, Pittsburg, Pa

Air Compressors.
Allis-Chalmers Co, Home Ins bldg, Chicago
American Air Compressor Wks, 26 Cortlandt st, N Y
American Well Works, Aurora, Ill
Blake, Geo F, Mfg Co, 91 Liberty st, New York
Chicago Pneumatic Tool Co, Fisher bldg, Chicago
Christensen, N A, 212-17 Herman bldg, Milwaukee
Clayton Air Compressor Works, 114 Liberty st, N Y
d'Auria Pumping Engine Co, Drexel bldg, Phila
Fairbanks, Morse & Co, Chicago
General Pneumatic Tool Co, Montour Falls, N Y
Gray-Blaisdell Co, Bradford, Pa
Guild & Garrison, So 10th st, Brooklyn, N Y
Ingersoll-Sergeant Drill Co, 26 Cortlandt st, N Y
Laidlaw-Dunn-Gordon Co, Cincinnati O
McGowan, John H, Co, Cincinnati, O
McKiernan Drill Co, 130 Liberty st, N Y
Norwalk Iron Works, So. Norwalk, Conn
Rand Drill Co, 128 Broadway, New York
Southwark Foundry & Machine Works, Philadelphia
Stilwell-Bierce & Smith-Vaile Co, Dayton, O
Sullivan Machinery Co, 135 Adams st, Chicago
Vulcan Iron Works, Wilkesbarre, Pa

Air Drill.
Columbus Pneumatic Tool Co, Columbus, Ohio

Air Hose Couplers
Clark Co, W J, Salem, Ohio

Aluminum
Pittsburg Reduction Co, Pittsburg, Pa

Annealing Boxes.
McNeil, Jas, & Bro, 29th & Railroad sts, Pittsburg, Pa

Artesian Wells.
Bacon Air Lift Co, 100 Broadway, New York
Cole Bros, 102 Fulton st, New York
Conlan, P H & J, Newark, N J
Cook Well Co, St. Louis, Mo.
Gregory, Elisha, 123 Liberty st, New York
Phillips & Worthington, 11 Broadway, New York
Stothoff Bros, Flemington, N J
Williams Bros, Ithaca, N Y

Artesian Well Tools and Supplies.
Star Drilling Mach Co, 104 Fulton st, New York

Asphalt.
Commercial Asphalt Co, 11 Broadway, New York
Sicilian Asphalt Paving Co, Times bldg, New York
Warren Bros Co, 93 Federal st, Boston

Asphalt Machinery.
Cummer, F D, & Sons, Cleveland, O.
Erie Machine Shops, Erie, Pa
Iroquois Iron Works, Buffalo, N Y

Batteries (Storage).
Coho & Co, H B, 114 Liberty st, New York

Bearings (Ball and Roller.)
Ball Bearing Co, 2322 Market st, Philadelphia
Bantam Mfg Co, Bantam, Conn
Standard Roller Bearing Co, Philadelphia

Balances. (Assay and Analytical.)
Ainsworth, Wm. & Sons, Denver, Colo

Belt Dressing.
Dixon, Jos., Crucible Co, Jersey City, N J
Main Belting Co, 1219 Carpenter st, Philadelphia

Belting (Canvas.)
Main Belting Co, 1219 Carpenter st, Philadelphia

Belting (Chain)
Aultman Co, Canton, O
Jeffrey Mfg Co, Columbus, O
Link Belt Engineering Co, Nicetown, Philadelphia

Belting (Leather)
Graton & Knight Mfg. Co, Worcester, Mass

Belt Lacing. (Steel.)
Bristol Co, Waterbury, Conn

Blast Furnaces.
Girard Boiler & Mfg Co, Girard, O
Means & Fulton Iron Works, Birmingham, Ala
Riter-Conley Mfg. Co, 55 Water st, Pittsburg, Pa

Blocks and Sheaves.
American Hoist & Derrick Co, St Paul, Minn
Boston & Lockport Blk. Co, 160 Commercial st, Boston
Hunt, C W Co, Richm'd Terrace, W N Brighton, S I
Macomber & Whyte Rope Co, 21 S. Canal st, Chicago
Yale & Towne Mfg Co, 9-13 Murray st, New York

Blowers.
American Blower Co, Detroit, Mich
Boston Blower Co, Business st, Hyde Park, Mass
Buffalo Forge Co, Buffalo, N Y
Mass. Fan Co, Waltham Mass
Roots, P H & F M Co, Connersville, Ind
Sturtevant, B F Co, Boston, Mass

Blue Printing Apparatus.
Elliott Electric Blue Print Co, Pittsburg.
Emerson Mfg. Co, F W, Rochester, N Y
Keuffel & Esser Co, 127 Fulton st, New York
Pittsburg Blue Print Co, 13-5-C Park bldg, Pittsburg
Soltmann, E G, 123 E 42d st, New York
Spaulding Print Paper Co, 44 Federal st, Boston
Young, C H & Co, 15 Exchange st, Boston

Blue Print Paper.
Elliott Electric Blue Print Co, Pittsburg
Soltman, E.G, 123 E 42d st, New York
Spaulding Print Paper Co, 44 Federal st, Boston
(see also Instruments, Engineering, etc.)

Boiler Supplies.
Glasgow Iron Co, Pottstown, Pa

Boilers.
Allis-Chalmers Co, Home Ins bldg, Chicago
Bacon, Earle C, 26 Cortlandt st, New York
Du Bois Iron Works, Du Bois, Pa
Enterprise Boiler Co, Youngstown, O
Fairbanks, Morse & Co Chicago
Gem City Boiler Co, Dayton, O
Girard Boiler & Mfg Co, Girard, O
Hodge Boiler Works, East Boston, Mass
Iroquois Iron Works, Buffalo, N Y
Kingsford Foundry & Machine Works, Oswego, N Y
Leffel, Jas. & Co, Springfield, Ohio
Lidgerwood Mfg Co, 96 Liberty st, New York
Morris Machine Works, Baldwinsville, N Y
McNeil, Jas. & Bro, 29th & Railroad sts, Pittsburg
Means & Fulton Iron Works, Birmingham, Ala
Mundy, J S, Newark, N J
Petroleum Iron Wks Co, Washington, Pa
Rawson & Morrison Mfg Co, Cambridgeport, Mass
Riter-Conley Mfg Co, 55 Water st, Pittsburg, Pa
Sharon Boiler Works, Sharon, Pa
Sullivan Machinery Co, 135 Adams st, Chicago
Variety Iron Works Co, Cleveland, Ohio
Warren City Tank & Boiler Works, Warren, O

Boilers (Water Tube.)
Babcock & Wilcox Co, 26 Cortlandt st, New York
Harrison Safety Boiler Wks, 3166 N 17th st, Phila
Keeler, E, Co, Williamsport, Pa
Walsh, W J, Holyoke, Mass

Bolt Clippers.
Helwig Mfg Co, St. Paul, Minn

Bolts. (Expansion.)
Church, Isaac, Toledo, O
Evans, F H, 596 Kent ave, Brooklyn
Steward & Comaine Mfg Co, 120 N 6th st, Phila

Boots and Shoes.
Putman, H J, & Co, 38 Bridge sq, Minneapolis

Brakes.
Brill, J G Co, Philadelphia, Pa
(see also Air Brakes.)

Brass Rolling Machinery.
Poole, Robert, & Son Co, Baltimore, Md

Brick.
Dickey, W S, Clay Mfg Co, Kansas City, Mo
Egyptian Silica Brick Process Co, Fredericksburg, Va
Jackson, John H, Albany, N Y
Johnsonburg Vit Brick Co, Johnsonburg, Pa
Mack Mfg Co, New Cumberland, West Virginia
McAvoy Vit Brick Co, 1545 Arch st, Philadelphia
Purington Paving Brick Co, Galesburg, Ill
Tomkins, Calvin, 120 Liberty st New York
Western Brick Co, Danville, Ill

Brick. (Fire.)
Maurer, Henry, & Son, 422 E 23d st, New York
New York Pottery Co, 12th ave & 36th st, N Y
Syracuse Stoneware Co, Syracuse, N Y

Brick Bond
Union Brick Bond Co, Pittsburg, Pa

Brick Machinery.
Bonnot Co, Canton, Ohio
Drake, C T, 300 W Jackson Boulevard Chicago

Bridge (Concrete).
Aberthaw Construction Co, Boston, Mas

Bridge Operating Machinery.
Edwards, Jos. & Co, 414 Water st. New York
Vulcan Iron Works, Chicago

Bridge Railings.
Albree, Chester R, 14-30 Market st, Allegheny, Pa
Belmont Iron Works, Philadelphia, Pa
King Bridge Co, Cleveland, O
Massillon Bridge Co, Massillon, Ohio
Stupp Bros, Bridge & Iron Co, St. Louis, Mo

Bridges and Buildings.
American Bridge Co, New York
Baltimore Bridge Co, Bush st & B & O R R, Baltimore
Bellefontaine Bridge & Iron Co, Bellefontaine, Ohio
Berlin Construction Co, Berlin, Conn
Boston Bridge Works, 47 Winter st, Boston, Mass
Champion Bridge Co, Wilmington, Ohio
Chicago Bridge & Iron Co, Chicago
Clinton Bridge & Iron Works, Clinton, Iowa
Columbia Bridge Co, Pittsburg
Concrete-Steel Engineering Co, Park Row bldg N
Easton Foundry & Machine Co, Easton, Pa
Eichleay, Jr., & Co., John, Pittsburg, Pa
Fort Pitt Bridge Works, Pittsburg, Pa
Garry Iron & Steel Co, Coe and Lake sts, Cleveland
Havana Bridge Works, Montour Falls, N Y
Joliet Bridge & Iron Co, Joliet, Ill
Kenwood Bridge Co, First Nat. Bank bldg, Chicago
King Bridge Co, Cleveland, Ohio
Massillon Bridge Co, Massillon, Ohio
McClintic-Marshall Construction Co, Pottstown, Pa
Mo. Valley Bridge & Iron Works, Leavenworth, Kan
Mount Vernon Bridge Works, Mount Vernon, Ohio
New Castle Bridge Co Indianapolis
New England Structural Co, Boston, Mass
Parker, T A, 202-208 North First st, Terre Haute Ind
Passaic Rolling Mill Co, Paterson, N J
Penn Bridge Co, Beaver Falls, Pa
Pennsylvania Steel Co, Steelton, Pa
Phoenix Bridge Co, Phoenixville, Pa
Riter-Conley Mfg Co, 55 Water st, Pittsburg, Pa
Rogers Iron Co, Springfield, O
San Francisco Bridge Co, 220 Market st, San Franc
Scaife, W B, & Sons Co, Pittsburg, Pa
Shoemaker, Lewis F, & Co, Harrison bldg, Pa
Standard Bridge Co, Omaha
Strobel, C L, Monadnock block, Chicago, Ill
Stupp Bros. Bridge & Iron Co, St. Louis, Mo
Valle & Young, Baltimore, Md
Variety Iron Works Co, Cleveland, Ohio
Virginia Bridge & Iron Co, Roanoke, Va
Wabash Bridge & Iron Works, Wabash, Ind
Youngstown Bridge Co, 320 Broadway, New York

Bridges (Rolling Lift.)
Scherzer Rolling Lift Bridge Co, Chicago

Buckets (Automatic.)
Brown Hoisting Machinery Co, Cleveland
Hayward Co, 9 Cedar st, New York
Hunt, C W, Co, Richmond Terrace, W N Brighton, N
Stuebner, O L, Long Island City, N Y
Union Iron Works, Hoboken, N J

Bumping Posts.
McCord & Co, 1445 Old Colony bldg, Chicago
Mechanical Mfg Co, Chicago

Bunkers (Suspension.)
Berquist, A S, 315 Bedford ave, Brooklyn, N Y

Burners (Oil.)
Hammel, C A 120 Fifth st, Los Angeles, Cal

Cableways (Suspension.)
Bacon, Earle C, 26 Cortlandt st, New York
Beatty M, & Sons, Welland, Ont
Broderick & Bascom Rope Co, St. Louis
Carson Trench Machine Co, 19 Dorrance st, Boston
Flory, S, Mfg Co, Bangor, Pa
Lambert Hoisting Engine Co, Newark, N J
Leschen, A, & Sons Rope Co, St. Louis
Lidgerwood Mfg Co, 96 Liberty st, New York
Macomber & Whyte Rope Co, 21 S. Canal st, Chicago
N. J. Foundry & Machine Co, 9 Murray st, N Y
Trenton Iron Co, Trenton, N J
United Telpherage Co, 20-22 Broad st, New York

Calking Yarn and Tools.
Ogden, J. Edward, Co, 149 Cedar st, New York

Car Couplers.
McConway & Torley Co Pittsburg, Pa
Railroad Supply Co, Bedford bldg, Chicago

Car Heating and Lighting.
Brill Co, J G, Philadelphia, Pa
Safety Car Heating & Lighting Co, 160 B'way, N Y

Car Trucks.
Brill, Co, J G Philadelphia, Pa

Car Wheels.
Brill Co, J G, Philadelphia, Pa
Cayuta Wheel & Foundry Co, Sayre, Pa
Ramapo Iron Works, Hillburn, N Y

Cars (Dump, Plantation, Flat, Hand, Logging Mining and Freight.)
Apex Equipment Co, 11 Broadway, New York
Austin, F C, Mfg Co, Harvey, Ill
Brill, J G, Co, Philadelphia, Pa
Efros Co, Chas, Bayonne, N J
Fairbanks, Morse & Co, Chicago
Ingoldsby Auto. Car Co, Chemical bldg, St. Louis
Koppel, Arthur, 60 Broad st, New York
National Drill & Mfg Co, 159 La Salle st, Chicago
Pressed Steel Car Co, Pittsburg, Pa
Ramapo Iron Works, Hillburn, N Y
Standard Steel Car Co, Frick bldg, Pittsburg
Steubner, O L, 176 Third st, Long Island City, N Y
Western Wheeled Scraper Co, Aurora, Ill
Wonham-Magor Eng. Wks, 29 Broadway, New York

Cars (Narrow Gage.)
Brill, J G Co, Philadelphia, Pa
Hunt, C W, Co, Richmond Terrace, W N Brighton, N Y
Koppel, Arthur, 68 Broad st, New York
Western Wheeled Scraper Co, Aurora, Ill
Wonham-Magor Eng. Wks, 29 Broadway, New York

Cars (Passenger & Freight.)
Brill, J G, Co, Philadelphia, Pa
Koppel. Arthur, 68 Broad st, New York

Cars (Wrecking & Ditching.)
Bucyrus Co, S. Milwaukee, Wis
Case Mfg Co, Columbus, O
Osgood Dredge Co, 37 State st, Albany N Y

Castings (Brass.)
Campbell, J B, Brass Works, Cascade st, Erie Pa

Castings (Iron.)
Builders Iron Foundry, Providence, R I
Brooks, T H, & Co, Cleveland, O
Coldwell-Wilcox Co, Newburg, N Y
Columbia Machine Works, 247 Chestnut st, Brooklyn
Crane & Co, Inc, A M, The Rookery, Chicago
Dimmick Pipe Co, Birmingham, Ala
Donaldson Iron Co, Emaus, Pa
Drummond, M J, & Co, 192 Broadway, New York
Du Bois Iron Works, Du Bois, Pa
Easton Foundry & Machine Co, Easton, Pa
Fox, John & Co, 253 Broadway, N Y
Massillon Iron & Steel Co, The Rookery, Chicago
Millar, Chas, & Son Co, Genesee st, Utica, N Y
Poole, Robert, & Son Co, Baltimore, Md
Reading Foundry Co, Ltd, Reading, Pa
Sessions Foundry Co, Bristol, Conn
Variety Iron Works Co, Cleveland, O
Warren Foundry & Machine Co, 160 Broadway, N Y
(see also Sewer and Street Castings)

Castings (Steel.)
Crane & Co, Inc, A M, The Rookery, Chicago

Cement (Portland.)
Alpha Portland Cement Co, Easton, Pa
Alsen's Am Portland Cement Wks, 45 Broadway, N Y
American Cement Co, 22 S 15th st, Philadelphia, Pa
Atlas Portland Cement Co, 30 Broad st, New York
Buckeye Portland Cement Co, Bellefontaine, Ohio
Coplay Cement Mfg Co, 1123 Broadway, N Y
Empire Portland Cement Co, Warners, N Y
Fredenburg & Lounsbury, Metropolitan bldg, N Y
French, Samuel H, & Co, Philadelphia
General Supply & Construct'n Co, 8-10 Bridge st, N
Glens Falls Portland Cement Co, Glens Falls, N Y
Hartranft, Wm G, Cement Co, Philadelphia
Helderberg Cement Co, Albany, N Y
Illinois Steel Co, Rookery, Chicago
Kelley Island Lime & Transport Co, Cleveland, Ohio
Lawrence Cement Mfg Co, 1 Broadway, New York
Lehigh Portland Cement Co, Allentown, Pa
Sinclair & Babson, 45 Broadway, New York
Snyder, Hiram, & Co, 229 Broadway, New York
St Louis Portland Cement Co, St Louis
Tuora Cement Co, 112 Church st, Buffalo, N Y
Vulcanite Portland Cement Co, 160 Fifth ave, N Y
Warner, Chas, Co, Wilmington, Del

Cement (Rosendale.)
Consolidated Rosendale Cem. Co, 26 Cortlandt st, N Y
Coplay Cement Mfg Co, 1123 Broadway, N Y
Cumberland (Md.) Cement & Mfg Co, P O Box 264
Meacham & Wright, Chamber of Commerce, Chicago
Milwaukee Cement Co, Milwaukee, Wis
Snyder, Hiram, & Co, 229 Broadway, New York
Tomkins, Calvin, 120 Liberty st, New York
Union Akron Cement Co, 141 Erie st, Buffalo, N Y
Western Cement Co, Louisville, Ky

Cement Kilns and Machinery.
Allis-Chalmers Co, Home Ins bldg, Chicago
Bartlett, C O, & Snow Co, Cleveland, Ohio
Bonnot Co, Canton, Ohio
Bradley Pulverizer Co, 92 State st, Boston, Mass
Clark, J C, Box 525, Atlanta, Ga
Dodge Mfg Co, Mishawaka, Indiana
Kent Mill Co, 170 Broadway, New York
Jeffrey Mfg Co, Columbus, Ohio
Smidth, F L, & Co, 66 Maiden Lane, New York
Sturtevant Mill Co, 106 Clayton st, Boston
Vulcan Iron Works, Wilkesbarre, Pa
West Pulverizing Mach. Co, Jersey City, N J

Cement Mixer.
Alexander Iron Works, Syracuse, N Y

Chain Blocks.
Yale & Towne Mfg Co, 9-13 Murray st, New York

Chains.
Newhall Chain Forge & Iron Co, 9 Murray st, N Y

Channelers.
Ingersoll-Sergeant Drill Co, 26 Cortlandt st, N Y
Sullivan Machinery Co, 135 Adams st, Chicago, Ill

Chemists.
McKenna, Chas. F, 221 Pearl st, N Y
(see also Laboratories.)

Chimneys. (Brick.)
Custodis, A, Chimney Const'n Co, Bennett bldg, N Y

Coal and Ore Handling Machinery.
Aultman Co. Canton, Ohio
Kaltenbach & Griess, 1618 Williamson bldg, Cleveland
Lambert Hoisting Engine Co, Newark, N J

Diamond Drills.
American Diamond Rock Drill Co, 95 Liberty st, N Y
Sullivan Machinery Co, 135 Adams st, Chicago

Differential Hoists.
Boston & Lockport Block Co, Boston, Mass

Ditching and Excavating Machinery.
Atlantic, Gulf & Pacific Co, Park Row bldg, N Y
Beatty, M, & Sons, Welland, Ont
Bucyrus Co, S. Milwaukee, Wis
Carson Trench Machine Co, 16 Dorrance st, Boston
Hayward Co, 97 Cedar st, New York
Marion Steam Shovel Co, Marion, Ohio
Osgood Dredge Co, Albany, N Y
Souther, John, & Co, 12 Post Office Square, Boston
Toledo Foundry & Machine Co, Toledo, Ohio
Vulcan Iron Works, Chicago
Vulcan Iron Works Co, Toledo
Western Wheeled Scraper Co, Aurora, Ill

Diver.
Falcon, Jos. G, 1110 Ayres Court, Evanston, Ill
Lowe Wrecking & Diving Co, 2 Coenties slip, N Y

Diving Apparatus.
Morse, Andrew J, & Son, 140 Congress st, Boston
Schrader's, A, Son, 32 Rose st, New York

Docks (Composite and Steel Floating).
Crandall, H I, & son Co, East Boston, Mass

Doors and Door Fittings.
Kinnear Mfg Co, Columbus, Ohio
N. J. Foundry & Machine Co, 9 Murray st, N Y
Wilson, J Godfrey, 3 W 29th St, N Y

Drafting Tables.
Emerson Mfg. Co, F W, Rochester, N Y
Hein Furniture Co, Toledo, O

Draftsmen's Supplies. (see Instruments.

Drain Tile (see Pipe, Vitrified Clay.)

Dredging and Dredging Machinery.
Atlantic, Gulf & Pacific Co, Park Row bldg, N Y
Beatty, M, & Sons, Welland, Ont
Bowers, A B, San Francisco, Cal
Bucyrus Co, S Milwaukee, Wis
Edwards, Jos., & Co, 414 Water st, New York
Ellicott Machine Co, Baltimore, Md
Foundation & Contracting Co, 5 Nassau st, New York
Gahagan, W H, 189 Montague st, Brooklyn, N Y
Gest, G M, Cincinnati and New York
Gillespie, T A, Co, Westinghouse bldg, Pittsburg, Pa
McCabe, Jas. F, 504 Equitable bldg, Baltimore, Md
McMullen, Arthur & Co, 13-21 Park Row bldg, N Y
O'Rourke, John F, Park Row bldg, New York
Philippine Eng & Const'n Co, P.O. Box 572, Manila, P.I.
Phillips & Worthington, 11 Broadway, New York
Quigley, R M, & Co, Laclede bldg, St. Louis, Mo
Regan & Mulock, D P, 429 Chestnut st, Philadelphia
Snare & Triest, 39 Cortlandt st, New York
United Eng & Con Co, 13-21 Park Row, New York
(see also Artesian Wells; Asphalt Paving; Bridges; Dredging; Wharf and Pier Builders.)

Contractors' Tools and Supplies.
Bond, H L, & Co, Pearl & Purchase sts, Boston, Mass
Crane & Co, Inc, A M, The Rookery, Chicago
Shannon, J Jacob, & Co, 1744 Market st, Philadelphia

Conveyors. (See Hoisting and Conveying Machinery; also see Trench Machines.)

Cooling Towers.
Alberger Condenser Co, 95 Liberty st, New York
Davidson, M T, 35 Sedgwick st, Brooklyn, N Y
Worthington, Henry R, Brooklyn, N Y

Cranes.
Am. Hoist & Derrick Co, St. Paul, Minn
Brown Hoisting Machinery Co, Cleveland, O
Bucyrus Co, S Milwaukee, Wis
Case Mfg Co, Columbus, Ohio
Chicago Pneumatic Tool Co, Fisher bldg, Chicago
Industrial Works, Bay City, Mich
Kaltenbach & Griess, 1618 Williamson bldg, Cleveland
King Bridge Co, Cleveland, Ohio
Manning, Maxwell & Moore, 85 Liberty st, New York
Marion Steam Shovel Co, Marion, Ohio
Niles Tool Works Co, 136-138 Liberty st, New York
Pawling & Harnischfeger, 167 Clinton st. Milwaukee
Wood, R D, & Co, Philadelphia, Pa

Cranes (Portable).
North Penn Iron Co, 3d & Sedgley ave, Philadelphia

Creosoting.
American Creosote Works, New Orleans
Atlantic Creo & Wood Pres Works, Norfolk, Va
Carbolineum Wood Preserving Co, 13 Park Row, N Y
Eppinger & Russell Co, 66 Broad st, New York
International Creosoting & Con. Co, Galveston, Tex
New Orleans Wood Pres Works, New Orleans, La
Norfolk Creosoting Co, Norfolk, Va
U S Wood Preserving Co, 29 Broadway, New York
West Pascagoula Creosote W'ks, W Pascagoula, Miss
Wyckoff Pipe & Creosoting Co, Portsmouth, Va

Crucibles.
Dixon, Jos., Crucible Co, Jersey City, N J

Damper Regulators.
d'Este, Julian Co, 15 Canal st, Boston

Derrick and Derrick Fittings.
American Hoist & Derrick Co, St. Paul, Minn
Byers, John F, Machine Co, Ravenna, Ohio
Contractors' Plant Mfg Co, 130 Erie st, Buffalo, N Y
Dobbie Foundry & Machine Co, 188 Dey st, N Y
Hayward Co, 97 Cedar st, New York
Backus Water Motor Co, Newark, N J
Chase Machine Co, Cleveland
Dayton Globe Iron Work Co, 7 Ludlow st, Dayton, O
Fairbanks, Morse & Co, Chicago, Ill
Mietz & Weiss, 128 Mott st, New York
New Era Iron Work Co, 37 Dale ave, Dayton, O
Otto Gas Engine Works, Philadelphia, Pa
Snow, T W, (Otto Engine) 360 Dearborn st, Chicago
Springfield Gas Engine Co, Springfield, O
Struthers-Wells Co, Warren, Pa
Temple Pump Co, 15th Place, Chicago
U. S. Wind Eng. & Pump Co, 20 Water st, Batavia, Il
(see also Engines, Oil.)

Engines (Hoisting).
American Hoist & Derrick Co, St. Paul, Minn
Bacon, Earle C, 26 Cortlandt st, New York
Beatty, M, & Sons, Welland, Ont
Brown Hoisting Machinery Co, Cleveland, O
Byers, John F., Machine Co, Ravenna, Ohio
Chase Machine Co, Cleveland
Contractors' Plant Mfg Co, 130 Erie st, Buffalo, N Y
Fairbanks, Morse & Co, Chicago, Ill
Flory, S, Mfg Co, Bangor, Pa
Hunt, C W., Co, Richmond Terrace, W N Brighton, NY
Lambert Hoisting Engine Co, Newark, N J
Lidgerwood Mfg Co, 96 Liberty st, New York
Monighan's Machine Works, 813 Carroll ave, Chicago
Mundy, J S, Newark, N J
Potter Mfg Co, 2010 N W ave, Indianapolis, Ind
Rawson & Morrison Mfg Co, Cambridgeport, Mass
Vulcan Iron Works, Wilkesbarre, Pa
(see also Electric Hoists.)

Engines (Marine).
Buffalo Forge Co, Buffalo, N Y
Kingsford Foundry & Machine Works, Oswego N Y
Morris Machine Works, Baldwinsville, N Y
Otto Gas Engine Works, Philadelphia, Pa

Engines (Oil)
Aultman Co, Canton, Ohio
Mietz & Weiss, 128 Mott st, New York

Engines (Portable).
Buffalo Pitts Steam Roller Works, Buffalo, N Y
Port Huron Engine Co, Port Huron, Mich

Engines (Steam).
Allis-Chalmers Co. Home Ins bldg, Chicago
Buffalo Forge Co, Buffalo, N Y
Erie Pump & Engine Co, Erie, Pa
Fairbanks, Morse & Co, Chicago
Featherstone Fdy & Mach Co, 348 N. Halsted, Chicag
Harrisburg Foundry & Mach Co, Harrisburg, Pa
Lawrence Machine Co, Lawrence, Mass
Leffel, Jas, & Co, Springfield, O
Morris Machine Works, Baldwinsville, N Y
Southwark Foundry & Machine Works, Philadelphia
Sturtevant, B F, Co, Boston, Mass
Struthers, Wells & Co, Warren, Pa
Vulcan Iron Works, Wilkesbarre, Pa

Engines (Traction).
Aultman Co, Canton, O
Reisler, Chas. L, Erie, Pa
Kelly, O S, Co, Springfield, O
Port Huron Engine Co, Port Huron, Mich

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Excavators and Excavating Machinery (see Ditching and Excavating Machinery and Steam Shovels.)

Exhaust Heads
Burt Mfg. Co. Akron, O

Expanded Metal.
Assoc Exp Metal Co, Room 1209, 256 Broadway, N Y
General Fireproofing Co, Youngstown, O
Truss Metal Lath Co, 20 Gold st, New York
Youngstown Iron & Steel Roofing Co, Youngstown, O

Explosives.
Explosives Mfg Co, Elmira, N Y
Electric Exploder Co, 120 Liberty st, N Y
Kirk, Arthur & Son, Co, 910 Duquesne Way, Pittsburg

Faucets.
Campbell, J B, Brass Works, Cascade st, Erie, Pa

Feed Water Heaters.
Allis-Chalmers Co, Home Ins bldg, Chicago
Erie Machine Shops, Erie, Pa
Gem City Boiler Co, Dayton, O
Green Fuel Economizer Co, Matteawan, N Y
Harrison Safety Boiler Wks, 3166 N 17th st, Phila
Patterson, Frank L, & Co, 25 Church st, New York
Robertson, Jas L, & Sons 192 Fulton st, New York
Stilwell-Bierce & Smith-Valle Co, Dayton, O

Feed Water Purifiers.
Industrial Water Co, 126 Liberty st, New York
Pittsburg Filter Mfg Co, Pittsburg, Pa
Smith, W B, Perth Amboy, N J

Fencing. (Wire).
American Steel & Wire Co, New York & Chicago
Jones National Fence Co, Columbus, O
Lamb Wire Fence Co Adrian, Mich

Filet. (Leather).
Butler, A G, 284 Pearl st, New York

Filing Cases.
Art Metal Construction Co, Jamestown, N Y
General Fireproofing Co, Youngstown, O

Filter Presses.
Stilwell-Bierce & Smith-Valle Co, Dayton, Ohio

Filters.
Stilwell-Bierce & Smith-Valle Co, Dayton, O
Deutsch, W M, 141 Broadway, N Y
Jackson Filter Mfg Co, St Louis
Loomis-Manning Filter Co, Philadelphia, Pa
Maignen Filtration Co, 1310 Arch st, Philadelphia
Continental-Jewell Co, 15 Broad st, N Y

Graders.
Austin Mfg Co Manhattan bldg, Chicago
National Drill & Mfg Co, 189 La Salle st, Chicago
Port Huron Engine Co, Port Huron, Mich
Shuart Grader Co, Oberlin, O
Western Wheeled Scraper Co, Aurora, Ill

Grain Elevators (see Tanks, grain storage.)

Granite (see Stone, also Paving Blocks).

Graphite.
Detroit Graphite Mfg Co, Detroit, Mich
Dixon, Jos., Crucible Co, Jersey City, N J
Gohen Mfg Co, Canton, Ohio
Internat'l Acheson Graphite Co, Niagara Falls, N Y

Grate Bars.
Dobble Foundry & Mach Co, 138 Dey st, N Y
Robertson, Jas L, & Sons, 192 Fulton st, New York

Greenhouses.
National Skylight & Const'n Co, 120 Liberty st, N Y
Plenty, Josephus, Jersey City, N J

Hanger (Joist).
Clark Co, W J, Salem, Ohio
Columbian Hardware Co, Cleveland, Ohio
Duplex Hanger Co, Cleveland, Ohio

Headlights (Locomotive).
Brill, J G, Co, Philadelphia
Dressel Ry Lamp Works, 3856 Park ave, New York
Railroad Supply Co, Bedford bldg, Chicago

Heating and Ventilating (Steam & Hot Water
American Blower Co, Detroit
Am. District Steam Heating Co, Lockport, N Y
Keeler, E, Co, Williamsport, Pa
Mass. Fan Co., Waltham, Mass

Hoisting Engines (see Engines, Hoisting).

Hoisting and Conveying Machinery.
Aultman Co, Canton, O
Beatty, M, & Sons, Welland, Ont
Bartlett, C O, & Snow Co, Cleveland, O
Brown Hoisting Machinery Co, Cleveland, O
Byers, John F, Machine Co, Ravenna, O
Caldwell, H W, & Son Co, 17th st & Western ave, Chic
Cresson Co Geo. V, Philadelphia
Carson Trench Machine Co, Boston, Mass
Dodge Mfg Co, Mishawaka, Indiana
Exeter Machine Works, Pittston, Pa
Garland, M. Co, Bay City, Mich
Hunt, C W, Co, Richmond Terrace, W N Brighton NY

Insulating Materials.
Standard Paint Co, 103 William st, New York

Iron Work (Ornamental).
Albree, Chester B, 14-30 Market st, Allegheny, Pa
Belmont Iron Works, Philadelphia Pa
Brooks, T H, & Co, Cleveland, O
Rogers Iron Co, Springfield, O
Schrieber, L, & Sons Co, Cincinnati, O
Snead & Co Iron Works, ft of Pine st, Jersey City, N J
Walton Iron Co, Cincinnati, O

Iron Work (Structural).
(see Structural Steel and Iron Work.)

Jacks
Duff Mfg Co, Allegheny, Pa
Norton, A O, 286 Congress st, Boston
Watson-Stillman Co, 210 E 43d st, N Y

Labor (Italian).
Greco, Jas, 108 Bayard st, New York
Italo-American Trust Co, 725 Carpenter st, Phila
Yuzzolino, N, 75 Mulberry st, New York

Laboratories (Chemical and Testing).
Booth, Garrett & Blair, Philadelphia, Pa
Hunt, R W, & Co, Rookery, Chicago
McKenna, Chas F, 221 Pearl st, New York
Pittsburg Testing Laboratory, Pittsburg, Pa
Riehle Bros. Test & Machine Co, Philadelphia, Pa

Lamps (Electric).
General Electric Co, Schenectady, N Y
Westinghouse Electric & Mfg Co, Pittsburg

Lathing (Metallic).
Berger Mfg Co, Canton O
General Fireproofing Co, Youngstown, O
(see also Fireproofing.)

Lead (Pig).
Millar, Chas & Son Co, Utica, N Y
Ogden, J Edward Co, 147 Cedar st, New York

Lead Furnaces.
McLean, John, 298 Monroe st, New York
Ogden, J Edward Co, 147 Cedar st, New York
Union Iron Works, Hoboken, N J

Light (Contractors').
Kilson Hydro-Carbon Htg & Lighting Co, Phila
Macleod & Co, Walter, Cincinnati Ohio
Wells Light Co, 44 Washington st, New York

Locomotive Tires.
Latrobe Steel Co, 1200 Girard bldg, Philadelphia, Pa

Locomotives.
American Locomotive Co, 25 Broad st, New York
Baldwin Locomotive Works, Philadelphia, Pa
Heisler, Charles L, Erie, Pa.
Porter, H K Co Pittsburg, Pa.

Locomotives (Contractors').
Avery, C F, 114 Liberty st, New York
Byers, John F, Machine Co, Ravenna, Ohio
Fitz-Hugh & Co, Chicago and New York
Porter, H K, Co, Pittsburg, Pa
Vulcan Iron Works, Wilkesbarre, Pa

Locomotives (Electric and Mining).
Baldwin Locomotive Works, Philadelphia, Pa
Brill, J G, Co, Philadelphia
General Electric Co, Schenectady, N Y
Jeffrey Mfg Co, Columbus, O
Koppel, Arthur, 66 Broad st, New York
Patton & Co, J. R., House bldg, Pittsburg, Pa
Porter, H K, Co, Pittsburg, Pa
Westinghouse Electric & Mfg Co, Pittsburg

Locomotive Headlights.
(see Headlights, Locomotives.)

Locomotives (Second hand).
(See Railway Equipment, Dealers.)

Lubricants.
Dixon, Jos, Crucible Co, Jersey City, N J

Lubricators.
Crane Co, Chicago, Ill
Lunkenheimer Co, Cincinnati, Ohio

Lumber (Creosoted).
American Creosote Works, Ltd, New Orleans, La
Atlantic Creo & Wood Pres Wks, 10 Bridge St, N Y
Carbolineum Wood Pres Co, 13 Park Row, N Y
International Creosoting & Con Co, Galveston, Tex
Norfolk Creosoting Co, Norfolk, Va
Wyckoff Pipe & Creosoting Co, Portsmouth, Va
(see also Creosoting)

Lumber (Dock).
Vanderbilt & Hopkins, 126 Liberty st, New York

Machinery (Second hand).
Braden, Jas A, 514 Park Row bldg, New York
Briggs, Marvin, 12 Broadway, New York
Carlin Machy & Supply Co, 186 Lacock st, Allegheny
Chicago House Wreck Co, W. 35th & Iron sts, Chicago
Contractors' Supply Co, 1531 Monadnock blk Chicago
Contractors' Plant Depot, 29 William st, New York
Donaldson & Newton, 421 Chestnut st, Philadelphia
Driscoll, J. T., McCormick bldg, Chicago
Efros Co, Chas, Bayonne, N J
Everson & Co, E W, Roxbury Crossing, Mass
Fitz-Hugh Co, Monadnock block, Chicago
Grant & Harper Machy Co, Park Row bldg, New York
Low, Edgar S, Co, Empire bldg, Pittsburg
Saxton, J C, 18 Broadway, New York
Troy Public Works Co, 1 Mann bldg, Utica, N Y
Ulman, Jacob, 44 Lloyd st, Buffalo, N Y
Whitney, O R, 39 Cortlandt st, New York
Young, E R, & Sons, Titusville, Pa

Machine Tools.
Manning, Maxwell & Moore, 85 Liberty st, New York
Niles Tool Works Co, 136-138 Liberty st, New York

Mail Chutes.
Cutler Mfg Co, Rochester, N Y

Manholes and Covers.
(See Sewer and Street Castings; also Castings, Iron.)

Measure (Rotary).
Steckenreiter Mfg Co, 98 Lake st, Chicago, Ill

Measuring Tapes. (Steel).
Chicago Steel Tape Co, 308 Temple Court, Chicago
Johnston, Robt, Wilkesbarre, Pa
Lufkin Rule Co, Saginaw, Mich
Starrett, L S, Co, 86 Crescent st, Athol, Mass

Merchandise Checks.
Am. Ry Supply Co, 24 Park Place, New York

Mechanical Draft.
American Blower Co, Detroit
Buffalo Forge Co, Buffalo, N Y
Sturtevant, B F, Co, Boston, Mass
(see also Blowers.)

Metal Hose (See Hose, Metal).

Meters (Current).
Berger, C L & Sons, 9 Province st, Boston, Mass

Meters (Electric).
General Electric Co, Schenectady, N Y
Westinghouse Electric & Mfg Co, Pittsburg

Meters (Gas).
Pittsburg Meter Co East Pittsburg, Pa

Meters (Water).
Buffalo Meter Co, 363 Washington st, Buffalo
Builders Iron Foundry, Providence, R I
Cole, E S, 635 Park Row bldg, New York
Hersey Mfg Co, Boston, Mass
Neptune Meter Co, 253 Broadway, New York
Pittsburg Meter Co, East Pittsburg, Pa
Thomson Meter Co, 79 Washington st, Brooklyn, N Y
Union Water Meter Co, Worcester, Mass
Worthington, Henry R, Brooklyn, N Y

Mining Machinery.
Allis-Chalmers Co, Home Ins bldg, Chicago
American Diamond Rock Drill Co, 95 Liberty st N Y
Blanton, E A, Jr, The Bourse, Philadelphia
Bradley Pulverizer Co, 92 State st, Boston, Mass
Bucyrus Co, S, Milwaukee, Wis
Fairbanks, Morse & Co, Chicago
General Electric Co, Schenectady, N Y
Jeffrey Mfg. Co, Columbus, O
Lidgerwood Mfg Co, 96 Liberty st, N Y
Marion Steam Shovel Co, Marion, Ohio
Rand Drill Co, 128 Broadway, N Y
Sullivan Machinery Co, 135 Adams st, Chicago, Ill
Vulcan Iron Works, Wilkesbarre, Pa

Mortar Mixers.
Drake, O T, 300 W Jackson Boulevard, Chicago
Fisher & Saxton Co, 123 G st, N E, Washington

Motors (Electric). (see Dynamos.)

Non-Conducting Covering.
U S Mineral Wool Co, 143 Liberty st, New York

Nut Locks.
National Elastic Nut Co, Milwaukee, Wis

Oil Burners.
Hammel, C A, 120 Fifth st, Los Angeles, Cal

Oil Cups.
Crane Co, Chicago, Ill
Lunkenheimer Co, Cincinnati, Ohio

Oil Mill Machinery.
Stilwell Bierce & Smith-Valle Co, Dayton, Ohio

Oil Pumps.
Sterrett Pump Co, 69 E 6th st, St. Paul

Oilless Bearings.
No Am Metaline Co, 6 West ave, Long Island City, N Y

Ore Handling Machinery.
(see Coal and Ore Handling Machinery.)

Packing.
Detroit Leather Specialty Co, 900 Michigan av, Detro
Robertson, Jas L, & Sons, 192 Fulton st, New York

Painting Machines (Pneumatic).
Hook, F E, Hudson, Mich
Macleod & Co, Walter, Cincinnati, O

Paint Pigment.
Internat'l Acheson Graphite Co, Niagara Falls N Y

Paints.
Carbolineum Wood Pres Co, 13 Park Row, N Y
Chilton Paint Co, 69 Cortlandt st, N Y
Detroit Graphite Mfg Co, Detroit, Mich
Dixon, Jos, Crucible Co, Jersey City, N Y
Gohegen Mfg Co, Canton, Ohio
Heath & Milligan Mfg Co, Chicago
Hook, F E, Hudson, Mich
Michigan Paint Co, 45 Woodland ave, Cleveland, O
National Paint Works, Williamsport, Pa
Rinald Bros, 1142 N Hancock st, Philadelphia
Sicilian Asphalt Paving Co, Times bldg, New York
Standard Paint Co, 103 William st, New York
Toch Bros, New York

Paint (Cold Water).
Bird & Co, J A & W, 10 Well st, Boston

Patent Attorneys.
Hill, Thos A, 261 Broadway, New York
Straley, Hasbrouck & Schloeder, 257 Broadway, N Y

Patterns (Wood).
Balkwill Pattern Works, 979 Hamilton st, Cleveland

Pattern Letters.
Butler, A G, 284 Pearl st, New York

Paving (Bituminous-Macadam).
Warren Bros Co, 93 Federal st, Boston

Paving Blocks (Stone).
Leopold, J, & Co, 18 Broadway, New York
(See also Stone.)

Paving Brick (see Brick).

Perforated Metals.
Harrington & King Perforating Co, Chicago, Ill

Pile Driving Machinery.
American Hoist & Derrick Co, St. Paul, Minn
Beatty, M, & Sons, Welland, Ont
Bucyrus Co, South Milwaukee Wis
Contractors' Plant Mfg Co, Buffalo, N Y
Lidgerwood Mfg Co, 96 Liberty st, N Y
Mundy, J S, Newark, N J
Toledo Foundry & Machine Co, Toledo, Ohio
Vulcan Iron Works, Chicago, Ill

Pile Hammers.
Vulcan Iron Works, Chicago, Ill

Piling.
American Creosote Works, Ltd, New Orleans, La
Atlantic Creosot. & Wood Pres. Co, 10 Bridge st, N Y
Eppinger & Russell Co, 66 Broad st, New York
Meredith J P, Memphis, Tenn
New Orleans Wood Preserving Works, New Orleans
Norfolk Creosoting Co, Norfolk, Va
Wyckoff Pipe & Creosoting Co, Portsmouth, Va

Pipe (Cast Iron).
Builders Iron Foundry, Providence, R I
Byers, John F, Machine Co, Ravenna, Ohio
Clow, J B, & Sons, Lake and Franklin sts, Chicago
Dimmick Pipe Co, Birmingham, Ala
Dimmick, J K, & Co, 1049-51 Drexel bldg, Phila
Donaldson Iron Co, Emaus, Pa
Drummond, M J, & Co, 192 Broadway, New York
Fox, John, & Co, 253 Broadway, New York
Massillon Iron & Steel Co, The Rookery, Chicago
Millar, Chas, & Son Co, Utica, N Y
Reading Foundry Co, Ltd, Reading, Pa
Snow, T W, 300 Dearborn st, Chicago, Ill
U S Cast Iron Pipe & Fdry Co, 217 La Salle st, Chicago
Warren Foundry & Machine Co, 160 Broadway, N Y
Wood, R D, & Co, Philadelphia, Pa

Pipe (Culvert). See Pipe, Vitrified Clay.

Pipe (Lead).
Millar, Chas, & Son Co, Utica, N Y

Pipe (Riveted Steel).
Carroll-Porter Boiler & Tank Co, Pittsburg, Pa
Columbiana Boiler Co, Columbiana, Ohio
Gillespie, T A, Co, Pittsburg, Pa
Keeler, E, Co, Williamsport, Pa
McNeil, Jas, & Bro, 29th & Railroad sts, Pittsburg, Pa
Means & Fulton Iron Works, Birmingham, Ala
Pelton Water Wheel Co, 134 Main st, San Francisco
Scaife, Wm B, & Sons Co, Pittsburg, Pa
Tallerday Steel Pipe & Tank Co, Waterloo, Ia
Warren City Tank & Boiler Works, Warren, O
Welgele Riveted Steel Pipe Works, Denver, Colo

Pipe (Spiral Riveted).
Am Spiral Pipe Works, 64-66 Wabash ave, Chicago

Pipe (Vitrified Clay).
American Sewer Pipe Co, Pittsburg, Pa
Blackmer & Post Pipe Co, St Louis, Mo
Dickey, W S, Clay Mfg Co, Kansas City, Mo
Evens & Howard Fire Brick Co, St Louis, Mo
Illinois Mfg Co, Macomb, Ill
Jackson, John H, Albany, N Y
Millar, Chas, & Son Co, Utica, N Y
Monmouth Mining & Mfg Co, Monmouth, Ill
New York Pottery Co, 129th ave & 36th st, N Y
Robinson Bros & Co, Akron, O
Syracuse Stoneware Co, Syracuse, N Y

Pipe (Wooden).
American District Steam Co, Lockport, N Y
Wyckoff Pipe & Creosoting Co, Portsmouth, Va

Pipe (Wrought Iron).
Crane Co, Chicago, Ill
Fox, John & Co, 253 Broadway, New York
National Tube Co, Pittsburg
Pittsburg Pipe & Iron Co, Allegheny, Pa
California Redwood Pipe Co, Los Angeles

Pipe Casing.
U S Mineral Wool Co, 143 Liberty st, New York

Pipe Cutting and Threading Machines.
Saunder's, D, Sons, Yonkers, N Y

Pipe Fittings and Flanges.
Crane Co, Chicago, Ill
Darling Pump & Mfg Co, Box E, Williamsport, Pa
Latrobe Steel Co, Girard bldg, Philadelphia
National Tube Co, Pittsburg
Thompson, J, & Co, Van Horn & Sophia sts, Phila P
Tight Joint Co, 306-310 East 47th st, New York
Walworth Mfg Co, Boston

Pipe Joint (High Pressure).
Tight Joint Co, 306-310 East 47th st, New York
Walworth Mfg Co, Boston

Pipe Jointers.
Watkins, Thos, Johnstown, Pa

Pipe Laying (Submarine).
Falcon, Jos G, 1110 Ayers Court, Evanston, Ill
Holmes, A L, Grand Rapids, Mich
Low Wrecking & Diving Co, 2 Coenties Slip, N Y

Pipe Line Supplies.
Ogden, J Edward Co, 147 Cedar st, New York

Frogs, Switches and Crossings.
Elliot Frog & Switch Co, East St. Louis, Ill
N Y Switch & Crossing Co, Hoboken, N J
Pennsylvania Steel Co, Steelton, Pa
Ramapo Iron Works, Hillburn, N Y
Weir Frog Co, Cincinnati, Ohio

Fuel Economizers (see Economizers).

Furnaces (Gas).
American Gas Furnace Co, 28 John st, New York

Furnaces (Oil).
Petroleum Iron Works, Washington, Pa
Tate, Jones & Co, Empire bldg, Pittsburg

Furniture (Steel).
General Fireproofing Co, Youngstown, O

Gages (Steam).
Crosby Steam Gage & Valve Co, Boston

Galvanized Iron and Steel.
Am Sheet Steel Co Battery Park bldg, New York

Galvanizing Kettles.
Columbiana Boiler Co, Columbiana, Ohio
Enterprise Boiler Co, Youngstown, Ohio

Garbage Dump Carts (see Wagons and Carts).

Garbage Furnace.
Morse-Boulger Destructor Co, 39 Cortlandt st, N Y
Smith-Siemens Garbage Furnace, 141 Broadway, N Y

Gas Fittings.
Campbell, J B, Brass Works, Cascade st, Erie, Pa

Gas Holders.
Wood, R D, & Co, 400 Chestnut st, Philadelphia
(see also Stand-Pipes and Tanks.)

Gas Machinery.
American Gas Furnace Co, 28 John st, New York
Gas Machinery Co, Cleveland, O
National Drill & Mfg Co, Chicago, Ill
Norwalk Iron Works, South Norwalk, Conn
Roots, P H, & F M, Co, Connersville, Ind
Wood, R D, & Co, Philadelphia, Pa

Gas Works.
Gas Machinery Co, Cleveland, Ohio

Gaskets.
McCord & Co, 1445 Old Colony bldg, Chicago
U. S. Mineral Wool Co, 143 Liberty st, New York

Gates (Railway).
Jones National Fence Co, Columbus, O
Pneumatic Signal Co, 1122 Broad-Exchange bldg, N Y

Gearing.
Caldwell, H W, & Son Co, Chicago
Morse Elevator Works, Philadelphia
Poole, Robert, & Son Co, Baltimore, Md
Smith S. Morgan, Co, York, Pa

Gear-Wheels.
Taylor Iron & Steel Co, High Bridge, N J

Gloves (Hand Made).
Luther, J P, Glove Co, 336 Pearl St, Berlin, Wis

Governors (Water-Wheel).
Lombard Governor Co, 36 Whittier st, Boston
Replogle Governor Works, Chestnut st, Akron, O

Williamsport, Pa
Detroit Leather Specialty Co, 900 Michigan av, Detroit

Hydraulic Machinery.
Dayton Globe Iron Work Co, 7 Ludlow st, Dayton, O
Deming Co, Salem, Ohio
Pelton Water Wheel Co, 134 Main st, San Francisco
Watson-Stillman Co, 210 E 43d st, New York
Wood, R D, & Co, Philadelphia, Pa

Hydraulic Presses.
Watson-Stillman Co, 204 E 43d st, New York
Wood, R D & Co, 400 Chestnut st, Philadelphia

Hydraulic Rams.
Pelton Water Wheel Co, 134 Main st, San Francisco

Ice and Refrigerating Machinery.
Featherstone Fdy & Mach Co. 348 N Halsted, Chicago

Indicators (Steam Engine).
Ashcroft Mfg Co, 85 Liberty st, New York
Crosby Steam Gage & Valve Co, Boston, Mass
Robertson, Jas L. & Sons, 192 Fulton st, N Y

Injectors.
Hayden & Derby Mfg Co, 85 Liberty st, New York
Lunkenheimer Co. Cincinnati, Ohio

Instruments (Engineering, Drafting).
Ainsworth, Wm. & Sons. Denver Colorado
Albrecht, C. R., 62 Fulton st, New York
Aloe, A S, Co, 414 N Broadway, St. Louis, Mo
Altenedor, Theo, & Sons, 945 Ridge ave, Phila, Pa
Archts' & Engrs' Supply Co, 1011 Walnut st, Kan. City
Beckman, L, 57 Adams st, Toledo, Ohio
Berger, C L, & Sons, 37 Williams st, Boston, Mass
Brandis, F E, Sons & Co, 814 Gates ave, Brooklyn, NY
Brown & Sharpe Mfg Co, Providence, R I
Buff & Buff Co, J P Station, Boston, Mass
Dietzgen, Eugene, Co, 181 Monroe st, Chicago
Engineers' Instrument Exchange, Scranton, Pa
Gurley, W & L E, Troy, N Y
Hardtmuth, L & C, 49 Barclay st, New York
Heller & Brightly, Spring Garden st & Ridge av, Phila
Hetterschied Mfg Wks, Grand Rapids, Mich
Keuffel & Esser Co, 127 Fulton st New York
Knight, F C, & Co, 400 Locust ave, Philadelphia Pa
Koelsch & Co, 138 Fulton st, New York
Ledder, G G, 302 School st, Boston
Lietz, A, Co, 422 Sacramento st, San Francisco, Cal
Mann & Co, 306-312 Olive st, St. Louis
Pfister, Herm, 428 Plum st, Cincinnati, O
Prince, L M, 108 West 4th st, Cincinnati, O
Queen & Co, Inc, Philadelphia, Pa
Saegmuller, G N, Washington, D C
Sala, J C, 429 Montgomery st, San Francisco
Schwencke, Kirk & Co, 26 Church st, New York
Soltmann, E G, 123 E 42d st, New York
Stackpole & Bro, 39 Fulton st, New York
Stanley, W F, & Co, Great Turnstile, Holborn, London
Steckenreiter Mfg Co, Chicago, Ill
Ulmer, J C, & Co, 224 Champlain st, Cleveland, Ohio
Universal Drafting Mach Co, Blackstone bldg, Cleve
Weber, F, & Co, Philadelphia
Williams, Brown & Earle, 918 Chestnut st, Phila
Wittstock, P & R, Berlin, S. 59, Germany
Young & Sons, 43 N. 4th st, Philadelphia

ADVERTISERS' CLASSIFIED DIRECTORY.

Pipe Tapping Machines (See Tapping Machines

Plaster.
Rock Plaster Co, 11 Broadway, N Y

Plows (see Scrapers and Plows).

Plumbers' Supplies.
Campbell, J G, Brass Works, Cascade st, Erie, Pa
Clow, J B, & Sons, Lake and Franklin sts, Chicago
Millar, Chas, & Son, Utica, N Y

Pneumatic Tools.
Chicago Pneumatic Tool Co, Fisher bldg, Chicago
Columbus Pneumatic Tool Co, Columbus, Ohio
Sielwig Mfg Co, St Paul, Minn
Philadelphia Pneumatic Tool Co, Philadelphia
Slocomb, F F, & Co, Wilmington, Del
(see also Riveting Machines)

Poles (Wooden)
(see Piling.)

Portable Light (see Light, Contractors').

Portable Tracks.
Hunt, C W, Co, Richmond Terrace, W N Brighton, NY
Koppel, Arthur, 68 Broad st, New York
Wonham-Magor Eng. Wks, 29 Broadway, New York

Power Hammers.
Merrill Bros, 467 Kent ave, Brooklyn, N Y

Power Transmission (Electric).
General Electric Co, Schenectady, N Y
Leffel, Jas, & Co, Springfield, O
Pelton Water Wheel Co, 134 Main st, San Francisco
Westinghouse Electric & Mfg Co, Pittsburg

Power Transmission (Rope).
Caldwell, H W, & Son Co, 17th st & Western ave, Chic
Case Mfg Co, Columbus, O
Cresson, Geo V, Co, Philadelphia
Dodge Mfg Co, Mishawaka, Indiana
Hunt, C W, Co, Richmond Terrace, W N Brighton, NY
Jeffrey Mfg Co, Columbus, O
Link Belt Engineering Co, Nicetown, Phila

Press (Artificial Stone).
Palmer, Noyes F, 150 Snediker ave Brooklyn, N Y

Pressure Gages (Recording)
Bristol Co, Waterbury, Conn

Pressure Regulators
d'Estâ, Julian, Co, 15 Canal st, Boston
Foster Engineering Co, Newark, N J
Union Water Meter Co, Worcester, Mass

Pulleys.
Case Mfg Co, Columbus, O
Dodge Mfg Co, Mishawaka, Indiana

Pulverizers (Ore and Cement).
Allis-Chalmers Co, Home Ins Bldg, Chicago
Bradley Pulverizer Co, 92 State st, Boston, Mass
Clark J C, Box 525, Atlanta, Ga
Cresson, Geo V, Co, Philadelphia
Kent Mill Co, 170 Broadway, New York
Newaygo Mfg Co, 149 Broadway, New York
Smidth, F L & Co, 66 Maiden lane, New York
West Pulverizing Machine Co, Jersey City, N J

Pumps and Pumping Machinery.
Allis-Chalmer Co, Home Ins bldg, Chicago
American Well Works, Aurora, Ill
Barr Pumping Engine Co, Philadelphia
Blake, Geo F, Mfg Co, 91 Liberty st, New York
Bonnot Co, Canton, Ohio
Cameron, A S, Steam Pump Works, New York
Clow, J B, & Sons, Lake and Franklin sts, Chicago
Cook Well Co, St Louis
d'Auria Pumping Engine Co, 941 Drexel bldg, Phila
Davidson, M T, 32 Keap st, Brooklyn, N Y
Dean Bros' Steam Pump Works, Indianapolis, Ind
Deane Steam Pump Co, Holyoke, Mass
Deming Co, Salem, Ohio
Downie Pump Co, Downieville, Pa
Edwards, Jos, & Co, 414 Water st, New York
Epping-Carpenter Co, Pittsburg
Fairbanks, Morse & Co, Chicago
Flint & Walling Mfg Co, Kendallville, Ind
Goulds Mfg Co, Seneca Falls, N Y
Gulld & Garrison, 80 10th st, Brooklyn, N Y
Hill Machine Co, Anderson, Ind
Heisler Pumping Engine Co, Erie, Pa
Knowles Steam Pump Works, 81 Liberty st, N Y
Laidlaw-Dunn-Gordon Co, Cincinnati, O
Lake City Engineering Co, Erie, Pa
Lawrence Machine Co, Lawrence, Mass
McGowan, John H, Co, Cincinnati, Ohio
Norwalk Iron Works Co, South Norwalk, Conn
Pulsometer Steam Pump Co, 135 Greenwich st, N Y
Quimby, Wm E, 141 Broadway, N Y
Roots, P H & F M, Co, Connersville, Ind
Scranton Steam Pump Co, 151 Franklin ave, Scranton
Snow Steam Pump Works, 130 Liberty st, New York
Southwark Foundry & Machine Works, Philadelphia
Stilwell-Bierce & Smith-Vaile Co, Dayton, Ohio
U S Wind Engine & Pump Co, Batavia, Ill
Wood, P K, 209 No Main st, Los Angeles, Cal
Wood, R D, & Co, Philadelphia
Worthington, Henry R, Brooklyn, N Y

Pumps (Air Lift).
Bacon Air Lift Co, 160 Broadway, New York
Ingersoll-Sergeant Drill Co, Havemeyer bldg, N Y
Pneumatic Engineering Co, 128 Broadway, N Y

Pumps (Artesian Wells.
Davidson, M T, 141 Broadway, New York
Downie Pump Co, Downieville, Pa
Wood, P K, 209 No Main st, Los Angeles, Cal

Pumps (Centrifugal).
Baldwinsville (N Y) Centrifugal Pump Works
Bucyrus Co, South Milwaukee, Wis
Edwards, Jos, & Co, 414 Water st, New York
Erie Pump & Engine Co, Erie, Pa
Kingsford Foundry & Machine Works, Oswego, N Y
Lake City Engineering Co, Erie, Pa
Lawrence Machine Co, Lawrence, Mass
Morris Machine Works, Baldwinsville, N Y
Temple Pump Co, 15th Place, Chicago
Wood, R D, & Co, Philadelphia

Pumps (Diaphragm).
Boston & Lockport Block Co, 140 Commercial st, Boston
Edson Mfg Co, 255 Atlantic ave, Boston

Pumps (Electric).
Davidson, M T, 141 Broadway, New York
Deming Co, Salem, Ohio
Goulds Mfg Co, Seneca Falls, N Y
Quimby, Wm. E, 141 Broadway, New York
Stilwell-Bierce & Smith-Vaile Co, Dayton, O
Worthington, Henry R, Brooklyn, N Y

Pumps (House Service).
Quimby, Wm E, 141 Broadway, New York

Pumps (Mining)
Davidson, M T, 141 Broadway, New York
Goulds Mfg Co, Seneca Falls, N Y
Pneumatic Engineering Co, 128 Broadway, N Y
Pulsometer Steam Pump Co, 135 Greenwich st, N Y
Snow Steam Pump Works, 130 Liberty st, New York
Stilwell-Bierce & Smith-Vaile Co, Dayton, O
Wood, P K, 209 No Main st, Los Angeles, Cal

Punching Tools.
Pels & Co, Henry, 66-68 Broad st, New York

Pyrometers.
Bristol Co, Waterbury, Conn

Quarrying Machinery.
Flory, S, Mfg Co, Bangor, Pa
Ingersoll-Sergeant Drill Co, 26 Cortlandt st, New York
Rand Drill Co, 128 Broadway, New York
Sullivan Machinery Co, 135 Adams st, Chicago
Tyrone Foundry & Machine Co, Tyrone, Pa

Rack Railways.
Hildenbrand, Wm, 1 Broadway, New York

Rail Fastenings.
Continuous Rail Joint Co of America, Newark, N J
National Elastic Nut Co, Milwaukee
N Y Rail Insulation & Equip Co, 300 Market st, Newark
Weber Ry Joint Mfg Co, Cotton Exch bldg, N Y

Rail Joints.
Bonzano Rail Joint Co, 22 South 15th st, Philadelphia
Continuous Rail Joint Co of America, Newark, N J
McConway & Torley Co, Pittsburg, Pa
Weber Ry Joint Mfg Co, Cotton Exch bldg, N Y

Rails (Relaying).
Donaldson & Newton, 421 Chestnut st, Philadelphia
Grant & Harper Machy Co, Park Row bldg, New York
Hyde Bros, 902 Lewis bldg, Pittsburg
Johnson, Chas F, 908 Ellicott square, Buffalo
Robinson & Orr, 419 Wood st, Pittsburg
Tallon, C J, 308 Market st, San Francisco

Rails (Steel).
Baumgarten & Bro, A F, Pittsburg, Pa
Buffalo Steel Co, Tonawanda, N Y
General Supply & Const'n Co, 8-10 Bridge st, N Y
Koppel, Arthur, 68 Broad st, New York
Pennsylvania Steel Co, Steelton, Pa

Railway Equipment (Dealers).
Apex Equipment Co, 11 Broadway, New York
Fitz-Hugh & Co, Monadnock bldg, Chicago
Low, Edgar S, Co, Empire bldg, Pittsburg
Mains Co, Ætna bldg, Cincinnati
Shannon, J Jacob, & Co, 1744 Market st, Philadelphia
Watson, Benjamin, 66 Beaver st, New York

Railway Signals (Pneumatic)
Pneumatic Signal Co, Broad-Exchange bldg, N Y

Railway Ties.
American Creosote Works, Ltd, New Orleans La
New Orleans Wood Preserving Works, New Orleans
Vanderbilt & Hopkins, 126 Liberty st, New York
Wyckoff Pipe & Creosoting Co, Portsmouth, Va

Railway Track Specialties.
Diamond State Steel Co, Wilmington, De
N Y Switch & Crossing Co, Hoboken, N J
Railroad Supply Co, Bedford bldg, Chicago
Ramapo Iron Works, Hillburn, N Y
Weir Frog Co, Cincinnati, Ohio

Railways (Industrial).
Koppel, Arthur, 68 Broad st, New York
Wonham-Magor Eng. Wks, 29 Broadway, New York

Riveting Machines.
Albree, Chester B, 14-30 Market st, Allegheny, Pa
Allen, John F, 370 Gerard ave, New York
General Pneumatic Tool Co, Montour Falls, N Y
Manning, Maxwell & Moore, 85 Liberty st, New York
Rand Drill Co, 128 Broadway, New York
Wood, R D, & Co, 400 Chestnut st, Philadelphia Pa
(see also Pneumatic Tools.)

Road Rollers and Machinery.
Acme Road Machinery Co, Frankfort, N Y
Austin Mfg Co, F C, Harvey, Ill
Buffalo Pitts Steam Roller Works, Buffalo, N Y
Climax Road Machine Co, Marathon, N Y
Erie Machine Shops, Erie, Pa
Goods Roads Machinery Co, Kennett Square, Pa
Harrisburg Foundry & Mach Co, Harrisburg, Pa
Heisler, Chas L, Erie, Pa
Huber Mfg Co, Marion, Ohio
Iroquois Iron Works, 178 Walden ave, Buffalo, N Y
Kelly-Springfield Road Roller Co, Springfield, O
Port Huron Engine Co, Port Huron, Mich
Scholl, Julian, & Co, 126 Liberty st, New York
Stuart Grader Co, Oberlin, O
Western Wheeled Scraper Co, Aurora, Ill

Rock and Ore Crushers.
Acme Road Machinery Co, Frankfort, N Y
Allis-Chalmers Co Home Ins bldg, Chicago
Austin Mfg Co, F C, Harvey, Ill
Aultman Co, Canton, Ohio
Bradley Pulverizer Co, 92 State st, Boston, Mass
Climax Road Machine Co, Marathon, N Y
Cresson Co, Geo V, Philadelphia
Farrel Foundry & Machine Co, 26 Cortlandt st, N Y
Good Roads Machinery Co, Kennett Square, Pa
Scholl, Julian, & Co, 126 Liberty st, New York
Smidth, F L & Co, 66 Maiden lane, New York
Sturtevant Mill Co, 108 Clayton st, Boston
Tyrone Foundry & Machine Co, Tyrone, Pa
Western Wheeled Scraper Co, Aurora, Ill

Rock Drills.
American Diamond Rock Drill Co, 95 Liberty st, N Y
Davis Calyx Drill Co, 128 Broadway, New York
Ingersoll-Sergeant Drill Co, Havemeyer bldg, N Y
McKiernan Drill Co, 170 Liberty st, N Y
Rand Drill Co, 128 Broadway, New York
Rogers, John M, Gloucester City, N J
Sullivan Machinery Co, 135 Adams st, Chicago, Ill
Wood Drill Works, 30 Dale ave, Paterson, N J

Rolling Doors, Partitions, etc. (Steel).
Kinnear Mfg Co, Columbus, Ohio
Wilson, J G, 3 W 29th St, New York

Roofing.
Standard Paint Co, 103 William st, New York

Roofing (Corrugated).
Garry Iron & Steel Co, Coe and Lake sts, Cleveland
Scaife, W B, & Sons Co, Pittsburg

Rope (Manila).
Dodge Mfg Co, Mishawaka, Indiana
Hunt, C W, Co, Richmond Terrace, W N Brighton, NY
Smith, S Morgan, Co, York, Pa

Scales (Weighing).
Fairbanks, Morse & Co, Chicago
Richardson Scale Co, 13 Park Row, New York

Schools (Correspondence).
Am. School of Armour Inst of Tech, Chicago
Penn. Corres Schools, Hamilton bldg, Pittsburg
(For Directory of Engineering Schools see p. 4.)

Scrapers and Plows.
Austin Mfg Co, Manhattan bldg, Chicago
Contractors' Plant Mfg Co, Buffalo, N Y
Climax Road Machine Co, Marathon, N Y
Good Roads Machinery Co, Kennett Square, Pa
National Drill & Mfg Co, 159 La Salle st, Chicago
Stuart Scraper Co, Oberlin, O
Smith & Sons Mfg Co, Kansas City, Mo
Syracuse Chilled Plow Co, Syracuse, N Y
Western Wheeled Scraper Co, Aurora, Ill

Screens (Stone and Sand).
Allis-Chalmers Co, Home Ins bldg, Chicago
Aultman Co, Canton, O
Climax Road Machine Co, Marathon, N Y
Harrington & King Perforating Co, Chicago, Ill
Taylor Iron & Steel Co, High Bridge, N J

Screens (Water-Works).
Coffin Valve Co, Boston, Mass
Coldwell-Wilcox Co, Newburg, N Y

Seamless Drawn Tanks and Tubes.
National Tube Co, Pittsburg

Separators (Oil and Steam).
Harrison Safety Boiler Wks, 3166 N 17th st, Phila
Robertson, Jas L, & Sons, 192 Fulton st, New York

Sewage Disposal.
Cameron Septic Tank Co Monadnock block, Chicago

Sewer Braces.
Dunn Mfg Co, Pittsburg, Pa
Potter Mfg Co, 2010 N W ave, Indianapolis, Ind

Sewer and Street Castings.
Permanent Mfg Co, Am Trust Bldg, Cleveland, O
Sessions Foundry Co, Bristol, Conn
(see also Castings, Iron.)

Sewer Pipe (see Pipe, Vitrified)

Shafting.
Case Mfg Co, Columbus, O
Cresson, Geo V, Philadelphia
Dodge Mfg Co, Mishawaka, Indiana
Poole, Robt, & Son Co, Baltimore, Md

Sheet Iron Work.
Am Sheet Steel Co, Battery Park bldg, New York
Petroleum Iron Works Co, Washington, Pa
Scaife, Wm B, & Sons Co, Pittsburg

Sheet Steel.
Am Sheet Steel Co, Battery Park bldg, New York
American Steel & Wire Co, New York & Chicago

Shutters (Fire Proof).
Kinnear Mfg Co, Columbus, Ohio

Skylights.
National Skylight & Const'n Co, 120 Liberty st, N Y
Plenty, Josephus, Jersey City, N J
Valle & Young, Baltimore, Md

Sluice Gates.
Coffin Valve Co, Boston, Mass
Coldwell-Wilcox Co, Newburg, N Y

Smoke Stacks (see Stand-Pipes and Tanks).

Speed Governors.
Foster Engineering Co, Newark, N J

Stamp Mills.
Allis-Chalmers Co, Home Ins bldg, Chicago

Stand-Pipes and Tanks.
Caldwell, W E, Co, 300 East Main st, Louisville, Ky
Chicago Bridge & Iron Co, Chicago
Columbiana Boiler Co, Columbiana, O
Du Bois Iron Works, Du Bois, Pa
Enterprise Boiler Co, Youngstown, O
Gem City Boiler Co, Dayton, O
Girard Boiler & Mfg Co, Girard, O
Hodge Boiler Co, East Boston, Mass
Keeler, E, Co, Williamsport, Pa
King Bridge Co, Cleveland, O
Means & Fulton Iron Works, Birmingham, Ala
North Penn Iron Co, 3d and Sedgley ave, Phila
Petroleum Iron Works Co, Washington, Pa
Riter-Conley Mfg Co, Pittsburg, Pa
Scaife, Wm B, & Sons Co, Pittsburg
Sharon Boiler Works, Sharon, Pa
Smith, Theo, & Sons Co, Jersey City, N J
Snow, T W, 300 Dearborn st, Chicago
Strutners-Wells Co, Warren, Pa
Tallerday Steel Pipe & Tank Co, Waterloo, Ia
Tippett & Wood, Phillipsburg, N J
U S Wind Engine & Pump Co, Batavia, Ill
Walsh, W J, Holyoke, Mass
Warren City Tank & Boiler Works, Warren, O
Wood, R D & Co, Philadelphia, Pa

Steam Shovels.
Austin, Mfg Co, Manhattan bldg, Chicago
Beatty, M, & Sons, Welland, Ont
Bucyrus Co, South Milwaukee, Wis
Hunt, C W, Co, Richmond Terrace, W N Brighton, NY
Marion Steam Shovel Co, Marion, O
Mead, John A, & Co, 7 Broadway, New York
Osgood Dredge Co, Albany, N Y
Souther, John, & Co, Boston, Mass
Thew Automatic Shovel Co, Lorain, O
Toledo Foundry & Machine Co, Toledo, O
Vulcan Iron Works Co, Toledo

Steam Specialties.
American District Steam Co, Lockport, N Y
Crane Co, Chicago, Ill
Darling Pump & Mfg Co, Box E, Williamsport, Pa
d'Estâ, Julian, Co, 15 Canal st, Boston
Harrison Safety Boiler Wks, 3166 N 17th st, Phila
Lunkenheimer Co, Cincinnati, O
Manning, Maxwell & Moore, 85 Liberty st, New York
Robertson, Jas L, & Sons, 192 Fulton st, New York
Union Steam Spec. Co, 151 Franklin ave, Scranton, Pa
(see also Separators, Oil and Steam.)

Steam Traps.
American Blower Co, Detroit, Mich
Buffalo Forge Co, Buffalo, N Y
Crane Co, Chicago, Ill
d'Estâ, Julian, Co, 15 Canal st, Boston
Sturtevant, B F, Co, Boston, Mass

Steel Clips.
Streeter, H A 35 Indiana st, Chicago

Steel Flanges (Weldless).
Latrobe Steel Co, Girard bldg, Philadelphia

Steel Ties.
Koppel, Arthur, 68 Broad st, New York

Stone.
Bound Brook (N J) Crushed Stone Co
Leopold, J, & Co, 18 Broadway, New York
Thiel, August, Guttenberg, N J
Tomkins, Calvin, 120 Liberty st, New York

Street Railway Supplies.
Brill, J G, Co, Philadelphia, Pa

Street Sprinklers and Sweepers
Austin, F C, Mfg Co, Harvey, Ill
Brill, J G, Co, Philadelphia, Pa
Edson Mfg Co, 255 Atlantic ave, Boston
Good Roads Machinery Co Kennett Square, Pa

Structural Steel and Iron Work.
Berlin Construction Co, Berlin, Conn
Brooks, T H, & Co, Cleveland, O
Eichleay, John, Jr, Co, Pittsburg
General Supply & Const'n Co, 8-10 Bridge st, N Y
Kratzer, W N, & Co, 3218 Smallman st, Pittsburg
Link Belt Engineering Co, Nicetown, Phila
Means & Fulton Iron Works, Birmingham, Ala
National Skylight & Const'n Co, 120 Liberty st, N Y
N J Foundry & Machine Co, 9 Murray st, N Y
North Penn Iron Co, 3d and Sedgley ave, Phila
Pedrick, E K, Co, 120 Liberty st, New York
Schreiber, L, & Sons Co, Cincinnati, O
Sharon Boiler Works, Sharon, Pa
Snare & Triest, 39 Cortlandt st, New York
Snead & Co Iron Works, ft of Pine st, Jersey City, N J
Streeter, H A, 35 Indiana st, Chicago
Tippett & Wood, Phillipsburg, N J
Walton Iron Co, Cincinnati
(see also Bridges and Buildings.)

Stump Pulling Machine.
Milne Mfg Co, 894 Eighth st, Monmouth, Ill

Submarine Armor (see Diving Apparatus).

Tacks, Thumb
Albrecht, C R, 62 Fulton st, New York

Tanks.
Berquist, A S, 515 Bedford ave, Brooklyn, N Y
Hodge Boiler Works, East Boston, Mass
Pacific Tank Co, Los Angeles, Cal.
Riter-Conley Mfg Co, Pittsburg, Pa
Scaife, W B, & Sons, Pittsburg
Steel Storage Elevator & Const'n Co, Buffalo, N Y
Warren City Tank & Boiler Works, Warren, O
(see also Stand Pipes and Tanks.)

Tapes (Steel). See Measuring Tapes.

Tapping Machines (Pipe).
Smith, Anthony P, Mfg Co, Newark, N J

Tents.
Murray & Co, 329 S Canal st, Chicago

Test Borings (see Artesian Wells).

Testing Laboratories (see Laboratories).

Testing Machines.
Falkenau-Sinclair Machine Co, 109 N 22 st, Phila
Riehle Bros Test & Mach Co, 1424 N 9th st, Phila

Thermometers (Recording).
Bristol Co Waterbury, Conn

Tie Plates.
Diamond State Steel Co, Wilmington, Del
Railroad Supply Co, Bedford bldg, Chicago

Ties
Koppel, Arthur, 68 Broad st, New York
Wyckoff Pipe & Creosoting Co, Portsmouth, Va

Time and Cost Keeping.
Industrial Time & Cost Keep. System, Bantam, Conn

Time Detectors.
Am Watchmen's Time Detector Co, 234 B'way, N Y
Imhauser, E, & Co, 206 Broadway, New York

Tracing Cloth.
Aloe, A S, Co, 414 North Broadway, St Louis
Favor, Ruhl & Co, 54 Park Place, N Y
Hardtmuth, L & C, 49 Barclay st, New York
(see also Instruments, Engineering, etc.)

Transformers.
General Electric Co, Schenectady, N Y

Trench Machines.
Carson Trench Machine Co, Boston, Mass
Potter Mfg Co, 2010 N W ave Indianapolis, Ind

Tubing (Flexible Metallic).
Moore, Chas C, & Co, 32 First st, San Francisco

Turbines.
Camden Water-Wheel Wks, Camden, New York
Dayton Globe Iron Works Co, 71 Power st, Dayton, O
Leffel, Jas, & Co, Springfield, O
Poole, Robert, & Son Co, Baltimore, Md
Risdon-Alcott Turbine Co, Mt Holly, N J
Smith, S Morgan Co, York, Pa
Stilwell-Bierce & Smith-Vaile Co, Dayton, O
Wood, R D, & Co, Philadelphia.

Turnbuckles.
Cleveland City Forge & Iron Co, Cleveland
Merrill Bros, 467 Kent ave, Brooklyn, N Y

Turntables.
American Bridge Co, New York
Boston Bridge Works, 47 Winter st, Boston, Mass
Chicago Bridge & Iron Co, Chicago
Columbia Bridge Co, Pittsburg
Fort Pitt Bridge Works, Pittsburg
Hunt, C W, Co, Richm'd Terrace, W N Brighton, N Y
King Bridge Co, Cleveland, O
Koppel, Arthur, 68 Broad st, New York
McClintic-Marshall Construction Co, Pottstown, Pa
Mo Valley Bridge & Iron Wks, Leavenworth, Kan
Mount Vernon Bridge Works, Mount Vernon, O
Passaic Steel Co, Paterson, N J
Philadelphia Bridge Works, Pottstown, Pa
Phoenix Bridge Co, 1321 Arch st, Philadelphia
Virginia Bridge & Iron Co, Roanoke, Va
Wonham-Magor Eng. Wks, 29 Broadway, New York

Valve Boxes.
Cayuta Wheel & Foundry Co, Sayre, Pa
Clow, J B, & Sons, Lake and Franklin sts, Chicago
Drummond, M J, & Co, 192 Broadway, N Y

Valves.
Crane Co, Chicago, Ill
Crosby Steam Gage & Valve Co, Boston
Darling Pump & Mfg Co, Box E, Williamsport, Pa
(see also Hydrants and Valves.)

Valves (Gas).
Campbell, J B, Brass Works, Cascade st, Erie, Pa
Chapman Valve Mfg Co, Indian Orchard, Mass
Crane Co, Chicago, Ill
Ludlow Valve Mfg Co, Troy, N Y
Roots, P H & F M, Co, Cornersville, Ind

Valves (Gate).
Cayuta Wheel & Foundry Co, Sayre, Pa
Coffin Valve Co, Boston, Mass
Coldwell-Wilcox Co, Newburg, N Y
Crane Co, Chicago, Ill
Millar, Chas, & Son Co, Utica, N Y
Walworth Mfg Co, Boston, Mass
Wood, R D, & Co, Philadelphia, Pa

Valves (Pressure Regulating).
Ross Valve Co, Troy, N Y
(see also Pressure Regulators.)

Valves (Steam).
Cayuta Wheel & Foundry Co, Sayre, Pa
Chapman Valve Mfg Co, Indian Orchard, Mass
Crane Co, Chicago, Ill
Crosby Steam Gage & Valve Co, Boston
Ludlow Valve Mfg Co, Troy, N Y
Lukenheimer Co, Cincinnati, O

Valves (Stop).
Foster Engineering Co, Newark, N J
Reading Foundry Co, Ltd, Reading, Pa
Thompson, J, & Co, Philadelphia

Varnish and Colors.
(see Paints.)

Vault Lights.
Brooks, T H, Cleveland, Ohio
Tucker & Vinton, 156 Fifth ave, New York

Ventilators.
Buffalo Forge Co, Buffalo, N Y
Merchant & Co, Inc, Philadelphia, Pa

Vises (Parallel).
Merrill Bros, 467 Kent ave, Brooklyn

Wagons and Carts.
Auburn Wagon Co, Martinsburg, W. Va
Austin, F C, Mfg Co, Harvey, Ill
Climax Road Machine Co, Marathon, N Y
Columbia Wagon Co., Columbia, Pa
Good Roads Machinery Co, Kennett Square, Pa
National Drill & Mfg Co, 159 La Salle st, Chicago
Port Huron Engine Co, Port Huron, Mich
U S Sanitary Co, Washington, D C
Watson Wagon Co, Canastota, N Y
Western Wheeled Scraper Co, Aurora, Ill

Water Motors.
Backus Water Motor Co, Newark, N J

Water Softening Plants.
Industrial Water Co, 126 Liberty st, New York
Kennicott Water Soft Co, 408 Great North. bldg, Chic
N Y Continental Jewell Filtration Co, 15 Broad st, NY
Patterson, D W, Harrison bldg, Philadelphia, Pa
Pittsburg Filter Mfg Co, Pittsburg

Water Storage Systems.
Acme Water Stor & Const'n Co, Park Row bldg, N Y

Water Wheel Governors.
(see Governors, Water-Wheel.)

Water Wheels.
Cassel Auto Water Motor Co, Seattle, Wash
Doble, Abner, Co, Fremont & Howard, San Francisco
Pelton Water Wheel Co, 134 Main st, San Francisco
(see also Turbines.)

Water-Works Tools and Supplies.
Flint & Walling Mfg Co, Kendallville, Ind
Smith, A P, Mfg Co. Newark, N J

Well Drilling Machinery.
American Well Works, Aurora, Ill
Cook Well Co, St Louis, Mo
Star Drilling Machine Co, 104 Fulton st, New York
Williams Bros, Ithaca, N Y

Wharf and Pier Builders.
Atlantic, Gulf & Pacific Co, 13-21 Park Row, N Y
McMullen, Arthur, & Co, 13-21 Park Row, New York
O'Rourke, John F, Park Row bldg, N Y
Phoenix Bridge Co, Phoenixville, Pa
San Francisco Bridge Co, 220 Market st, San Francisco

Wheelbarrows.
Cockburn Barrow & Machine Co, Jersey City, N J
Syracuse Chilled Plow Co, Syracuse, N Y
Steubner, G L, Long Island City, N Y
Western Wheeled Scraper Co, Aurora, Ill

Whistles.
Crosby Steam Gage & Valve Co, Boston
Lunkenheimer Co, Cincinnati, O

Windmills.
Flint & Walling Mfg Co, Kendallville, Ind
Temple Pump Co, 15th Place, Chicago
U S Wind Engine & Pump Co, Batavia, Ill

Wire, Wire Rope and Cables.
American Steel & Wire Co, New York & Chicago
Broderick & Bascom Rope Co, St Louis
Leschen, A, & Sons Rope Co, St Louis
Macomber & Whyte Rope Co, 21 S Canal st, Chicago
Roebling's, John A, Sons Co, Trenton, N J
Trenton Iron Co, Trenton, N J
Williamsport Wire Rope Co, Williamsport, Pa

Worm Gearing.
Morse, Williams & Co, Philadelphia, Pa

Wire Fence (see Fencing).

Wood Preserving (see Creosoting).

Wrenches.
Keystone Drop Forge Wks, 20th & Clearfield sts, Phila

TURN TO PAGES XXIV-V

16.

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